JOURNAL
OF THE
AMERICAN VETERINARY MEDICAL ASSOCIATION

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Volume CXVI MAY 1950 Number 878

THE CENTURY'S FIRST TEN YEARS

PERIOD OF EVENTFUL PROFESSIONAL PROGRESS

BESIDES notable advances in pathology and applied prophylaxis, the first decade of the century was famous for lively professional progress. Inklings of a competent veterinary service were seen for the first time.

EDUCATION improved; state associations grew to large, influential societies; AVMA membership rose from 3 to 4 figures; graduates located at all strategic centers; the new licensure laws were getting enforced; and the plague-control program now in operation was launched—all in the public interest.

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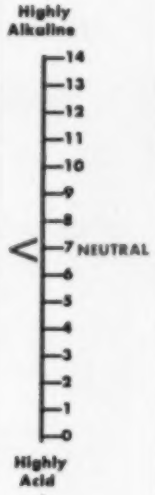

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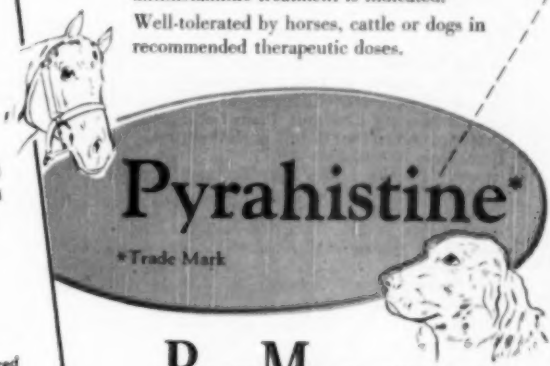

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1. Antihistamines in the Cow and Horse—Cornell Vet. (Oct.) 1949, p. 353.
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AVMA ☆ Report

Veterinary Medical Activities

✦ The Board of Governors, Executive Board Chairman W. G. Brock, President C. P. Zepp, Sr., and President-Elect W. M. Coffee met in Chicago for a full day of discussion and action upon AVMA affairs on Saturday, March 25, 1950.

* * *

✦ L. J. Regan, M. D., author of the lead article in the April JOURNAL, was the subject of an article in *Time* (March 27, 1950). The news story deals with Dr. Regan's work in the field of medico-legal litigation, and substantiates the importance of his analysis of similar problems in the veterinary medical field.

* * *

✦ Attention is called to the absence of the color plate inserted to face page 306 of the April JOURNAL. Because of mechanical inefficiency, this page was omitted from a few copies of the JOURNAL. The page will be supplied upon request to members and subscribers who failed to find it in their copies.

* * *

✦ "For profitable, efficient production of livestock, place your veterinarian on your livestock production team," said Dr. C. D. Van Houweling, AVMA director of professional relations, while speaking to the Chicago Farmers on March 20, 1950, in Chicago.

* * *

✦ Livestock health, and the part which veterinarians play in keeping this on a favorable plane, is featured in an article "Let's Wipe Out Hog Cholera" by F. J. Keilholz in the March, 1950, *Country Gentleman*. A brief quote in this article from a letter by Executive Secretary J. G. Hardenbergh presents the view of a thinking body of AVMA members.

* * *

✦ Dr. Kenneth G. McKay, a member of the AVMA Committee on Public Relations, uses his position effectively. During the fall months, he sat in on the disease control committees of the California Cattlemen's Association, the California Woolgrowers, and the California Farm Bureau. He presented a paper at the annual convention of the latter, and assisted in writing resolutions adopted by the other organizations.

* * *

✦ Officers of all six sections of the program for the Miami Beach Convention have completed their arrangements with speakers. Some new and novel ideas are being tried out, and we feel that members attending will be well repaid in hearing the very latest in veterinary medical developments.

* * *

✦ Proposed amendments for the changes in the Constitution and By-Laws are being published in this issue of the JOURNAL, and will appear also in the June and July issues. Study them, and instruct the delegate from your association to the House of Representatives regarding your wishes, when he votes on these amendments.

* * *

✦ The Joint Livestock Committee met in Chicago on March 23, 1950, and Gen. Harry Johnson discussed the progress made and the present status of the foot-and-mouth disease campaign in Mexico. The AVMA was represented by Drs. R. C. Klussendorf and C. D. Van Houweling.

* * *

✦ Dr. J. La Vere Davidson, president of the American Veterinary Exhibitors' Association, spent March 22 in Chicago checking the arrangements for commercial exhibits and the prospective arrangement of booths in the Municipal Auditorium at Miami Beach.

* * *

✦ Drs. H. E. Moskey and D. K. Detweiler will represent the AVMA at the United States Pharmacopoeial Convention to be held in Washington, D. C., May 9 and 10, 1950, upon authorization from the Board of Governors.

* * *

✦ Travel budgets for AVMA officers and staff members have risen rapidly during recent years. In order to use travel funds more effectively, a committee of the Executive Board, consisting of Drs. S. F. Scheidy and O. Norling-Christensen, have studied the records of past years and will outline some suggestions for coming years. The Executive Board will consider these proposals at Miami Beach.

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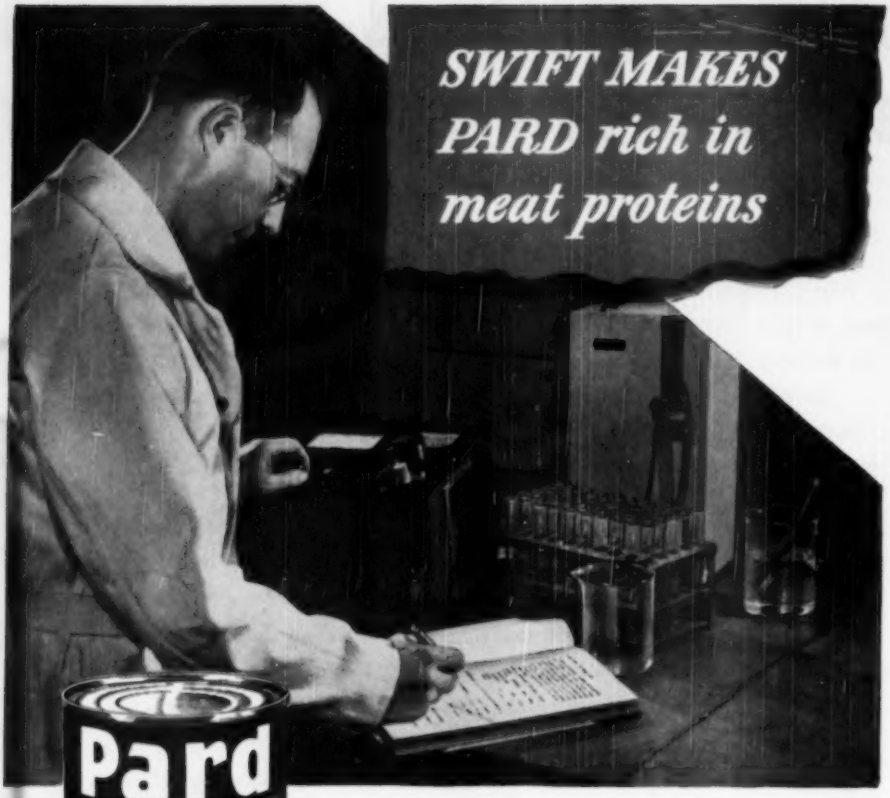

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Farmer's Question Corner

PREPARED BY American Foundation For Animal Health

How to Control Swine Erysipelas

QUESTION: How serious is swine erysipelas?

ANSWER: The infection has spread all over the nation in the last 20 years.

QUESTION: In what form does it appear?

ANSWER: It takes several forms. There is an acute type, and a chronic type. Also, the disease does not limit itself to swine. The same germs can infect turkeys, lambs and human beings.

QUESTION: What are some findings in the acute form?

ANSWER: Common symptoms in swine are sudden deaths, red splotches on the skin, soreness and arched backs.

QUESTION: How does the chronic form differ from the acute?

ANSWER: The chronic symptoms are lack of gain, lameness, patchy loss of skin, bob tails and unthriftiness.

QUESTION: Can a producer rely on these symptoms?

ANSWER: No. Swine erysipelas may resemble hog cholera and other diseases. It is very baffling, and often does not run true to type. A laboratory examination can be made, however, to help tell if erysipelas is present.

QUESTION: What can a swine raiser do to protect his animals?

ANSWER: 1. Keep newly purchased swine away from the main herd for at least three weeks. 2. Keep a sharp lookout for lame joints, or thickened ears among young pigs. 3. Have a veterinarian examine the herd immediately if suspicious symptoms appear.

QUESTION: What about vaccination?

ANSWER: In localities where the disease is prevalent vaccination is a wise, standard practice. However, since the vaccine is a living culture of the causative germ, and is also highly infectious to man, it should be administered by a veterinarian.

NOTE—Due to space limitations, general questions cannot be handled by this column.

Farmer's Question Corner

PREPARED BY American Foundation For Animal Health

The Nation's Worst Swine Killer

QUESTION: What disease kills more swine in America?

ANSWER: Hog cholera. In the worst killer year, it destroyed $20,000,000 worth of hogs.

QUESTION: What causes it?

ANSWER: A virus—the smallest known germ. Even under a microscope it is so small that 50 pig hearts could fit on the head of a pin.

QUESTION: How can you tell when cholera is present?

ANSWER: That's one of the worst things about hog cholera. In a number of cases there may be no symptoms at all. Usually the first symptoms of cholera include loss of appetite, fever, weakness and dying rapidly. Pigs may start and appear normal one day, and be dead the next.

QUESTION: Can cholera be cured?

ANSWER: There is no cure. Prevention is the only answer. Hog cholera losses can be cut down to almost nothing by proper vaccination of pigs around weaning time.

QUESTION: Any special points to be kept in mind about vaccination?

ANSWER: Yes. Only healthy pigs in good condition should be vaccinated. Other vaccination and virus may cause bad reactions. A veterinarian should always be made by the veterinarian to determine whether or not the pigs are in proper condition for vaccination. Another point is important. The virus is dangerous and should be handled only by veterinarians or those who know how and are trained to use it. Proper sterilization of the needles and other precautions are necessary.

NOTE—Due to space limitations, general questions cannot be handled by this column.

Farmer's Question Corner

PREPARED BY American Foundation For Animal Health

The Great Milk Thief—Mastitis

QUESTION: Just what is the udder disease, mastitis?

ANSWER: Mastitis means any inflammation of the udder. Several kinds of germs can cause several types of infection in teats and udders. Injuries may also cause mastitis.

QUESTION: What are some common symptoms of mastitis?

ANSWER: If the case is acute, the udder may be sore and swollen; there may be a discharge from the teats and the milk may be stringy. In chronic cases, however, and there are hundreds of thousands of these—a laboratory test and physical examination may be required for a sure diagnosis.

QUESTION: What treatment is best for mastitis?

ANSWER: Several types of medication are helpful but tests must be made first to find out what germs are causing the trouble—so the correct treatment can be used to fight that [illegible]

[illegible] may give a cow's udder a chance to heal. Prompt [illegible] may save a cow's usefulness.

QUESTION: What can one do to prevent mastitis?

ANSWER: Guard against injuries; be sure milking machines are adjusted correctly; buy clean replacement stock; sterilize milking equipment; milk infected cows last; work out a practical control plan with the veterinarian. Medication alone will not solve this problem. A planned control program is necessary.

NOTE—Due to space limitations, general questions cannot be handled by this column.

Farmer's Question Corner

PREPARED BY American Foundation For Animal Health

Facts About Shipping Fever

QUESTION: What causes cattle to come down with shipping fever?

ANSWER: This disease is usually due to a combination of highly infectious agents. It affects millions of dollars worth of cattle annually.

QUESTION: Is it always brought on by shipping?

ANSWER: Not always, but usually. When cattle are shipped, they often suffer exposure to the elements as well as exposure to germs. In a weakened condition, mingling with strange animals, they are easy prey for the infection.

QUESTION: How does an infected animal act?

ANSWER: It may refuse to eat, may be "slow", have a high fever, the eyes may water, and breathing may be labored. If these symptoms show up, however, it's best to get a veterinarian's diagnosis, because similar symptoms are present in the early stages of blacking and hemorrhagic septicemia, and it's dangerous to make a mistake.

QUESTION: Is there an effective treatment?

ANSWER: By having the animals vaccinated at least two weeks before they are shipped. If the owner waits until shipping time, a different type of vaccination is indicated.

QUESTION: After the animals arrive at their destination, are any further precautions necessary?

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NOTE—Due to space limitations, general questions cannot be handled by this column.

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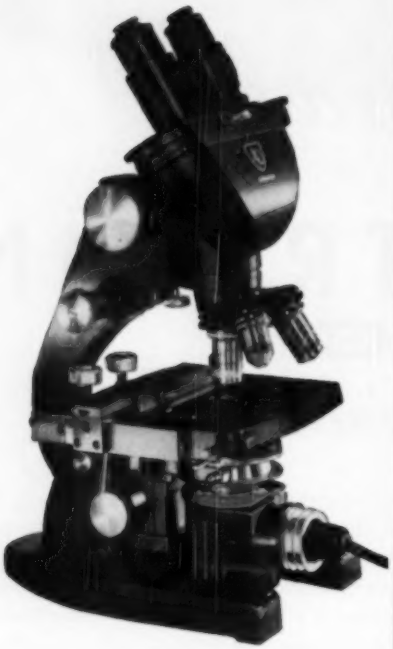

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VOL. CXVI MAY, 1950 NO. 878

Veterinary Service to Medical Research

RICHARD D. LARCEY, D.V.M.

Cleveland, Ohio

THE SCHOOL of Medicine at Western Reserve University maintains a spacious four-story building for research animals. At institutions of this type, animals used in research include a wide range of species, from frogs and goldfish to sheep and goats and, occasionally, horses and cattle. Seldom does the medical school faculty or staff include individuals who are specially trained to care for the medical and sanitary needs of these animals. This duty is usually assigned to a faculty committee of four or five men who are already carrying a full load of teaching and research responsibilities. This situation frequently results in inadequate supervision of the care of research animals, hence poor animals and decreased reliability of experimental data. In attempting to remedy this undesirable circumstance, a number of institutions in this country have called upon veterinarians for assistance in raising the level of health and well-being of their research animals. The care of these animals on a full-time basis is a relatively new field for veterinarians.

In general, the work of the veterinarian in medical research consists of attention to the medical needs of research animals and supervising their sanitary care and feeding. The everyday duties are much like veterinary practice, except that more of the work is administrative in nature. For instance, the veterinarian may be held responsible for selecting and purchasing research animals, for planning building changes, and for assigning space in the animal building to the various research workers. These, and many other purely administrative tasks must often be assumed by the veterinarian.

Special medical problems which are more or less peculiar to research animals are occasionally seen. This is particularly true in the case of dogs used in research. These animals are brought to the research laboratory from dog pounds where they would otherwise have been destroyed. Many are manifesting the symptoms of distemper at the time of arrival, and all of them are excellent candidates for the development of that disease after transportation and exposure to infected individuals. A high percentage of these pound-infected dogs develop encephalitis and/or chorea following the febrile period of distemper. The second most troublesome disease of dogs coming to our laboratory is Vincent's infection. In this condition, we frequently observe perioral ulceration as well as the typical lesions of the gingival and buccal surfaces. Lesions occurring outside of the oral cavity are necrotic ulcers extending from the lips down under the mandible for 1 or 2 inches. These ulcers are treated satisfactorily by debridement and silver nitrate cautery under general anesthesia. A two- to four-week period of quarantine is imposed on all new dogs coming to the animal quarters. In this time, undesirable individuals are eliminated, diseases are treated and injuries repaired, and the dogs are generally made comfortable and suitable for experiment. It is, of course, impractical to attempt extensive surgical procedures, or to treat near-hopeless medical cases, and the veterinarian's discretion greatly assists the research men.

Disease conditions in the small research animals (rats, mice, guinea pigs, rabbits,

Presented before the Section on Small Animals, Eighty-sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949.

etc.) can be best managed by preventive measures. These animals must be purchased from reliable breeders, and strict attention paid to cage sanitation, diet, temperature control, and ventilation. The physical arrangement of the animal building is all-important in maintaining the health of small animal colonies, and the veterinarian is called upon to advise in this regard. No attempt will be made here to discuss the many diseases of small laboratory animals. The veterinarian who is interested will find a wealth of literature available in any medical or veterinary medical library.

Veterinarians entering this type of work will find that it offers many beneficial aspects. The opportunity for exchange of ideas and experiences between veterinarian, physician, and research scientist is both stimulating and educational. The veterinarian can contribute much by providing information on animal normals, and by helping to recognize intercurrent diseases and normal variations in colonies of animals on experiment. Teaching the techniques of blood drawing, transfusion, and anesthesia in animals is a helpful function of the veterinarian in medical research. Finally, the work is pleasant and the hours are regular, and for those who are interested, opportunities for teaching and research are provided.

Welcoming Address of Dean Hutchison at Meeting of Land-Grant Colleges

The first meeting of the veterinary division of the Association of Land-Grant Colleges and Universities was held in Kansas City, Oct. 26, 1949 (see JOURNAL, Dec., 1949:497). Dr. C. B. Hutchison, vice-president of the University of California and dean of its College of Agriculture, welcomed the Division of Veterinary Medicine into full academic fellowship. In opening, he said:

"In this meeting and in your presence here, we see brought to successful fruition the hopes of many and the efforts of some of us to bring together for mutually helpful deliberations and counsel, under the aegis of this great national association of institutions of higher learning, you who are charged by your respective institutions with the responsibility of advancing education, research and practice in the field of veterinary medicine."

Continuing, Dr. Hutchison mentioned the mutual benefits which could be expected by coöperation between veterinarians and their associates in the basic biologic sciences, in animal husbandry, dairy husbandry, poultry husbandry, and other fields. "Veterinarians and animal husbandmen must both be concerned with the well-being of the herd and the flock—the veterinarian with preventive, even more than curative medicine, and the animal husbandman with good management, feeding, and care."

A hope was expressed that the development of new colleges of veterinary medicine would not be overdone, but at the same time it was indicated that this competition may be good, both for the veterinary profession and for the livestock industry, because "it will stimulate all of us to look to the quality of our product rather than merely to quantity and to base our appeals for public support upon the quality of educational research service we are able to render our respective states and the nation."

Dr. Hutchison stressed the importance of a highly competent and well-trained staff as being superior to the physical facilities. "If we can introduce more science into our veterinary curricula, and lay a broader scientific base for veterinary practice, the art of veterinary practice will take care of itself." . . . "Our Schools and Colleges of Veterinary Medicine must be creators of new knowledge rather than be content merely to pass on knowledge already extant, or knowledge that is being created by others."

Dr. Hutchison closed his welcome with the following. "So, I bid you a warm welcome today as you associate yourselves with and become a part of this Association of Land-Grant Colleges and Universities, and as we inaugurate this new Division. It is my earnest hope that you will find in this Association a helpful and encouraging environment in which to advance veterinary science and its application to the welfare of both man and animal. We cannot be content with less."

Due to mechanical inefficiency, the four-color drawing facing p. 306 in the April JOURNAL was omitted from a few copies. If missing from your JOURNAL, the color page will be sent immediately upon receipt of a postcard addressed to the: AVMA, Editorial Department, 600 S. Michigan Ave., Chicago 5, Ill.

The Doctor of Veterinary Medicine and Communicable Disease Control

F. S. LEEDER, M.D., D.P.H.

Lansing, Michigan

THE FACT that man is susceptible to approximately 80 diseases found in animals suggests immediately that the doctor of veterinary medicine plays a vital part in the control of disease in man. He is making a major contribution to public health merely in the control of animal diseases. However, his contribution would be even greater if he worked not as an individual in veterinary medicine but as a member of a team in the whole field of human and animal communicable disease control.

Fortunately, not all diseases of animals to which man is susceptible exist in the United States. However, with the free movement of people from country to country, new diseases could arise in this country in a matter of hours. The diseases of animals which concern us most in the United States include actinomycosis, anthrax, brucellosis, encephalomyelitis, swine erysipelas, leptospirosis, ornithosis, Q fever, rabies, salmonellosis, staphylococcus and streptococcus infections, beef tapeworm, trichinosis, tuberculosis, and tularemia. All of these cause illness in man and occur in animals with which man is likely to come in contact.

These diseases of animals yield to the same epizoötiologic approach used for diseases of man. It is obvious that a public health trained physician would not be at a loss in the public health approach to the control of these diseases in animals, nor would the public health trained veterinarian be at a loss in the public health control of the same diseases in human beings. The two are so thoroughly interrelated that it seems foolish to attempt to separate them.

One great error that is made in the field of disease control is the tendency, for some obscure reason, to place the public health trained veterinarian in the section on engineering in a state health department instead of in the section on epidemiology. The place of the doctor of veterinary medicine in disease control is definitely in the medical section of a health department and not in the engineering section. For some unknown reason, because veterinarians know about cows, state health departments invariably try to turn them into milk inspectors. This does not follow.

Because of this tendency to inveigle well-trained veterinarians into the field of sanitation rather than into the field of medicine, many veterinarians consider veterinary public health a poor prospect and they are not to be blamed. Only when we recognize the basic fact that doctors of veterinary medicine should be associated with doctors of medicine will we be able to attract them to the field of public health.

Nor does all the blame rest with the health departments. Most of the schools of public health that offer public health training to veterinarians should reëxamine their curriculums. In a mixed group studying toward a master's degree in public health, most schools classify the doctor of veterinary medicine with the public health engineer rather than with the doctor of medicine. As long as this situation exists, few veterinarians will be attracted to the field of public health, a field in which they are needed now and in which they will be more essential as time goes on. Therefore, two things must happen before public health doctors of veterinary medicine will be available in adequate numbers. State health departments and schools of public health must both change their attitudes.

Effective disease control once required what could be called the "triangle" approach. One side of the equilateral triangle was the medical epidemiologist; another, was the public health engineer; and the third side was the trained laboratory technician. With our present knowledge of disease control, it is obvious that a "square" approach is essential—the various sides represented by the physician, veterinarian, public health engineer, and laboratory technician.

The question "How can this be brought about?" can be answered by the one word, education—education of the community so that its residents recognize the contribution veterinarians can make in the control of communicable disease; education of health officials so that the veterinarian will be used in the field in which he is trained; and

Director, Division of Disease Control, Records and Statistics, Michigan Department of Health, Lansing.

Presented before the Section on Public Health, Eighty-sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949.

education of teachers in public health schools so that they will supply the type of training that will make the veterinarian most effective in the field of disease control.

The Michigan Department of Health has had a public health trained doctor of veterinary medicine assigned to its Division of Disease Control for the past several years and is pleased with the effectiveness of the program. The department is glad to state that when public health trained doctors of veterinary medicine work in conjunction with public health trained doctors of medicine, they make equal contributions in the field of disease control.

Chemist-Veterinarian Relationships

Success of the sampling and testing programs of state racing associations depends upon coöperation between official veterinarians and official chemists. Use of the proper saliva-sampling technique is an example. Application of the forceps and swab for the required period of about four minutes is difficult and tedious, and there is a tendency for the veterinarian to shorten this step to a minute or two unless its importance and relation to volume of saliva obtained is thoroughly understood. In this connection, it also is desirable that the chemist have some experience in actual collection of saliva samples so that he can appreciate the veterinarian's problems and understand that there is occasionally a horse on which the standard procedure cannot be used.—*The Blood-Horse, Dec. 31, 1949.*

Endocrinology as we know it today began about 100 years ago with Addison's studies of the adrenal glands. In slow succession, these led to practical knowledge of the other glands of internal secretion—thymus, pituitary, pancreas, parathyroid, and sex organs. Their inter-relations, their total functions, and the chemistry of their secretions, however, are only beginning to be unraveled.

AVMA Eighty-Seventh Annual Meeting—Miami Beach, Aug. 21-24, 1950

—Miami Beach News Bureau Photo

Miami Beach's shore on beautiful Biscayne Bay. From Miami Beach, gorgeous sunsets may be seen over the bay at the end of every day.

Future Health Needs of the Nation

W. PALMER DEARING, M.D.

Washington, D.C.

THE SUBJECT on which I have been asked to speak is as broad as it is long and as deep as it is wide. For, when we in the field of public health speak of health needs today, we speak of all factors and influences which bear on the health of the population. The nation's needs extend to many fields. As a result, we in the health professions have extended our traditional interests in environmental sanitation and communicable disease control to chronic diseases, accident prevention, industrial health, water and air pollution, better distribution of health services, housing, and similar problems.

This expanded concept of public health is in large measure a response to a growing public awareness of the fact that the nation's health needs are not now being met. It is a democratic fact of life that when there is a growing and expressed desire for better services, these services will eventually be supplied.

The job of translating this expressed desire into national and community action will not be easy. There will be—as there already has been—resistance on the part of certain groups to what they regard as encroachment on freedom of individual action. The inevitable problem of translating scientific knowledge into practical measures for the betterment of health will remain with us in the health professions. And the age-old problem of education—not only of the so-called lay public but of members of both your profession and mine will continue to challenge our imaginations and our ingenuity. Throughout the health field, there is too little awareness of responsibilities for health beyond services rendered to individual patients. This is true of both the veterinary medical and public health professions.

Because both the nation's health needs and the job of fulfilling them are virtually unlimited in scope, I want to concentrate principally on one aspect of health: the role of the veterinarian in the field of public health.

The importance of the veterinarian in public health is based on the responsibility of the profession for safeguarding the public welfare. The close relationship between animal and human diseases has long been recognized. Only by degress, however, have we come to realize that a sound animal industry is essential to a sound economy and a healthy population.

The accomplishments of veterinarians in the control of such diseases as bovine tuberculosis, anthrax, glanders, and encephalomyelitis, in the establishment of milk and meat sanitation programs, and in research certainly need no review here. Veterinary medicine has made remarkable contributions to the advancement of human health. Through veterinary research, the role of insect vectors in disease transmission was firmly established. Similarly, the first demonstration in man or animals of an infectious disease caused by a virus was provided—by Loeffler and Frosch—through their work with foot-and-mouth disease. The typing of viruses, the application of tuberculin as a diagnostic agent, and the development of a modern treatment for hookworm in man are among the many scientific advances which veterinary medicine has brought about.

You will agree, however, that although the contributions of the veterinarians have been substantial, there is still a long way to go in protecting the human population against diseases of animal origin. We can agree, for example, that our present methods of combating and controlling rabies are disgracefully inadequate. Only 12 of the 48 states are free of rabies. Only 12 of the 36 states with endemic rabies have anything approaching adequate programs for control. Each year, more than 30,000 persons take the long and often painful series of vaccine inoculations as a result of exposure to rabid or suspected dogs. Moreover, the incidence of rabies during the past fifteen years has increased alarmingly.

Rabies can be controlled and eventually eradicated if we really go to work on the job.

The United States Public Health Service (U.S.P.H.S.) has taken steps to assist the states in the control and eradication of rabies by the loan of veterinary officers, epidemic aid to areas of high incidence of disease, and the development of improved control methods.

Deputy surgeon general, Public Health Service, Federal Security Agency, Washington, D.C.

Presented before the General Session, Eighty-sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949.

Another example of a problem pressing for national solution is the control of brucellosis. The reported incidence of human brucellosis in the United States has increased from 100 cases in 1929 to more than 6,000 in 1947. Because of the difficulty of diagnosing the disease, moreover, we recognize that even these figures represent only a small fraction of the actual incidence. The U.S. Public Health Service realizes that the control of human brucellosis is dependent on the eradication of the disease in domestic animals and the sanitary handling and processing of foods of animal origin. To achieve these objectives, the Service recommends that all dairy products be pasteurized and that all meat products be processed under sanitary conditions and receive veterinary inspection. All livestock owners should participate in one of the brucellosis-control plans recommended by the U.S. Livestock Sanitary Association and approved by U.S. Bureau of Animal Industry.

Problems such as these are of vital concern not only to public health agencies or to the public generally; they should be of primary concern to veterinarians.

What, then, are some of the specific contributions which veterinarians can make to public health? How may they contribute toward fulfilling the health needs of the nation? I should like to suggest four general areas in which contributions can be made.

CONTROL OF COMMUNICABLE DISEASES

First, is to work toward better control over animal communicable diseases which are transmissible to man.

I have mentioned rabies and brucellosis as of current concern. A few of the others are: Q fever, encephalomyelitis, murine typhus, salmonellosis, plague, tuberculosis, trichinosis.

From the standpoint of the health officer, one important advance in securing better controls of these diseases would be the establishment of a reporting service on animal morbidity and mortality. Such a system, established nationwide, would be invaluable to the health officer or epidemiologist in determining the sources for certain human illnesses, and, among other things, in planning disease-prevention campaigns. (A few state health departments are to be commended for recognizing this fact and for appointing veterinarians as collaborating epidemiologists to report significant animal diseases.)

In addition to reporting, the veterinarian can improve and extend the practice of preventive medicine in the animal population. A disease-free animal population is obviously necessary to insure a disease-free supply of foods and other products of animal origin such as wool, hides, and important medicines.

This is by no means an easy job, and it is complicated by the resistance of many influential groups to socially desirable practices. Many of you are familiar, for example, with the long fight—or series of fights—against the control of brucellosis in cattle. As veterans, and victors, in such bitter wars as that against the eradication of bovine tuberculosis, veterinarians are familiar with the strategy and tactics of "special interest" groups. One of the easiest things for men to do is to persuade themselves toward a course of action which is in their own self interest. Part of your job as veterinarians, and of ours, is to educate these and other groups to a concept of the national interest.

INSPECTION SERVICES

Second, veterinarians can aid materially in the fight for better health by working for broader coverage and higher standards in the inspection services. Inspection is not in itself a dramatic job. The results of failure to inspect, however, can lead to the drama of disaster. As you are aware, there is urgent need to provide better inspection services, particularly of poultry and milk. By its studies of existing practices throughout the United States, the special Committee on Food and Milk Hygiene of your Association is performing a signal service in that direction.

RESEARCH

Third, veterinarians must continue the valuable work that they have been carrying on in basic research on animal diseases and on the relationship between these diseases and those which afflict man. Even in the area of the laboratory and the test tube, all of us who work in the field of health are confronted with a fight—a fight which should, by all odds, have long since been won for the forces of general human enlightenment. I refer to the hysterical and uninformed campaigns periodically conducted by the so-called antivivisectionist against the use of animals for scientific purposes.

The campaigns are, of course, founded in ignorance—ignorance of the role that animal experimentation has played in the development of medical science, ignorance of the uses to which experimental animals are put, and, most of all, colossal ignorance of the social disaster which would result if their objectives were realized.

A useful function which can be performed by veterinarians—and by all other groups concerned with national health—is the eradication of such ignorance. Animal experimentation is the basis for nearly all medical progress. Medical schools, hospitals, and private laboratories must maintain animal laboratories. Our knowledge of nutrition, of the functions of the bodily organs, the use of drugs, the control of such diseases as diabetes, smallpox, and diphtheria, the investigation of poliomyelitis and chronic disease, and the development of such drugs as penicillin, streptomycin, and the sulfonamides had their basis in animal experimentation.

The final word in this fight has by no means been spoken, but Dr. Anton J. Carlson* has well summed up the situation:

"If a man is not worth more than a dog," he said, "then our efforts to improve man are in error. We had better start raising more dogs and destroying more men, women, and children for the good of the dog so that the canine species may inherit the earth."

Michigan wisely charges state public health officials with responsibility for establishing and enforcing humane and hygienic regulations for the use of animals in veterinary medicine. We should commend the veterinarians and the medical and public health authorities of Michigan for their leadership in accomplishing this forward step to govern the use of animals for scientific purposes.

EDUCATION

Fourth, the veterinary medical profession can contribute substantially toward better public health by stimulating schools of veterinary medicine to promote education in public health and to develop an over-all social responsibility among students during their undergraduate days.

In the scientific field, there is a tendency to become overbalanced in the natural sciences at the expense of the social sciences. In this, I assume the veterinary medical profession is no exception. Certainly, we find that the average veterinary medical graduate has limited training in public health. As an administrator concerned not only with health *per se*, but with its proper relation to our entire national life, I am painfully aware of the limited social orientation of health technologists as a group. In our rising professional generations, we must achieve a balanced, broad, positive social integration and viewpoint.

The U.S. Public Health Service has urged the deans of the American colleges of veterinary medicine to turn their attention to the problems of public health and the veterinarians' future role in it. The need for more and better trained veterinarians in the field of public health is well established. According to a recent survey, there are now 400 veterinarians in full-time public health work. On the other hand, we estimate that to provide the very minimal veterinary health services there should be 1,400 public health veterinarians, or 3½ times the total number now working in official health agencies. Because of the acute shortage of veterinarians trained for public health work, many of the responsibilities which belong to the veterinary medical profession have had to be assumed by other professional, and even subprofessional, personnel. As the field of public health expands, so will the need and the demand for veterinary services. Members of the profession have a responsibility for meeting that social need.

These four fronts—controlling animal diseases communicable to mankind by extending preventive medicine in the animal world, improving and expanding inspection services, carrying on basic research, and promoting better training in public health—represent fields in which we know the veterinarians can make important contributions. With physicians, dentists, engineers, nurses, and other members of the public health team, veterinarians can work toward our mutual goal—a healthier and a longer life span.

PUBLIC HEALTH PROBLEMS

For you members of the team, I should like to review some of the fields which will command the attention of public health workers in the immediate future. Among those of primary and immediate importance are:

1) The control and eventual eradication of the communicable diseases such as tuberculosis, syphilis, diarrheas, brucellosis, and influenza. That communicable disease in man can be controlled or eradicated has been demonstrated with typhoid fever, smallpox, malaria, and pneumonia. Veterinary medicine can point to similar accomplishments in the eradication of foot-and-mouth disease, contagious pleuropneumonia, dourine, and glanders in the United States.

2) Providing for the care of chronic diseases, particularly those associated with

*Carlson, Anton J., physiologist at University of Chicago, quoted in "Animal Experimentation" by J. Roscoe Creer, M.D., member of Board of Review, George Washington Victor Council, in "Confidential—from Washington," May, 1949.

the older age brackets of the population. Heart disease, nephritis, cerebral hemorrhage, cancer, and diabetes are today our major killers, accounting for 60 per cent of all deaths in the United States. The growing problem of chronic illness can be met only through concerted effort which will be reflected in better facilities, better diagnostic and therapeutic skills, and greatly intensified practice of preventive medicine, in the years ahead. These technical improvements must be part of an integrated program which includes rehabilitation, occupational retraining, and other social services for the permanently handicapped.

3) The problem of dental health—it has been estimated that we need half again the number of dentists we now have to take care of the dental needs of the Nation. Results of experiments with fluorine as a preventive for dental caries are promising. If they are as successful as we hope, the shortage of dentists may be somewhat reduced, but will exist for a long time to come. In any case, the problem of dental health will be of increasing concern to the public health officer in the near future.

4) In the field of mental health, our knowledge of the causes, prevention, and treatment of mental illness is scarcely more than medieval. Our facilities for caring for patients suffering from mental diseases are wretchedly inadequate. Our psychiatrists and subsidiary personnel in the field of mental hygiene are far too few. Yet every evidence points toward substantial increases in the number of persons who will require treatment for mental ills, as we struggle belatedly to increase our knowledge of their causes and cure.

5) The problem of healthful housing. There is perhaps no better illustration of the rapidly expanding scope of public health concerns than in the general area of evironmental health. It is not an oversimplification to say that the home is a cornerstone of health. Not only sanitation but proper facilities for privacy, adequate lighting, proper protection against heat and cold—all have deep-reaching effects on the total health of the individual. These facts have been recognized by the Congress. The housing legislation passed in July, 1949, marks a first step toward the goal of healthful housing everywhere in the nation.

The U.S. Public Health Service, since 1938, has worked with the housing agencies of the federal government in the general interests of improved hygiene of housing. More recently, we have concluded an agreement with the Housing and Home Finance Agency establishing a permanent working relationship between the two agencies in the interests of better housing.

Housing, industrial health, air and water pollution, accident prevention, better distribution of health services are all the concern of today's public health team. As Professor C. E. A. Winslow* says: "The health officer who is interested in back yards and quarantine signs dates back to 1900. The health officer who adds immunization, child welfare, and tuberculosis clinics dates back to 1930. The health officer of 1950 must have a broad social approach to social and economic problems."

Our world is, in truth, an expanding world. As veterinarians, daily concerned with problems of health, you have an increasingly important place in it—and an essential role to play.

*Winslow, C. E. A., Public Health in the World Today, Harvard University Press, 1949, p. 32.

Relations Between Veterinarian and Rescue League

An excellent item of public relations activity on the part of the veterinarian is demonstrated in the leaflet, *Four Paws*, published by the Animal Rescue League of the Palm Beaches (Fla.), Inc.

The title of the item is "Your Veterinarian," prepared by J. J. McCarthy (CORN '39). It presents a brief review of the education of the veterinarian and his qualifications for the handling of diseases and injuries of animals. In understandable terms, it discusses the value of diagnosis and the fact that such diagnosis is always based upon careful examination of the patient.

A few of the remarks presented in the item are as follows: "Your veterinarian is the only person qualified by training and experience to diagnose with any degree of accuracy an ailment of a sick animal. . . . After the diagnosis has been established, proper treatment must be instituted. Here again, your veterinarian is the only one who knows what regimen should be followed for the good of the patient. . . . Your veterinarian strives to keep abreast of the most recent developments in the science and art of his profession by constant reading, attendance at professional gatherings, and consultations with his colleagues."

There is nothing more terrible than energetic ignorance.—*Goethe.*

A Method of Handling Hemolytic Icterus of Newborn Foals

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RECENT investigational work[1,2] has greatly clarified the etiologic factor involved in the rapidly fatal disease of newborn foals known as congenital foal disease, hemolytic icterus, or icterus neonatorum. It has now been established that this malady is due to the absorption of hemagglutinins and hemolysins from the colostrum of sensitized mares by the newborn, suckling foals. The similarity to the so-called Rh factor in human blood is sufficient to brand icterus neonatorum as a familial disease. Prior to this disclosure, treatment was unsuccessfully attempted with penicillin, sulfonamide drugs, transfusions of dam's blood, and navel-ill serum.

Some recoveries have been obtained[3] with intramuscular injections of 40 mg. of thiamine, in the belief that a congenital B_1 deficiency was responsible. The etiologic clarification has led to a more rational therapeutic approach to the disease. Trum[4] has reported recoveries from repeated transfusions of compatible blood in doses of 300 cc. every three hours. He allowed the foals to nurse their dams, although he recommended that they be force-fed, if necessary, with milk from sources other than the dam. Transfusions of compatible blood were given to 3 of 6 icteric foals[5] and they were allowed to nurse their dams; 1 of these recovered. The other 3 were given transfusions of compatible blood and placed on nurse mares; 2 of these recovered. He recommends the removal of 1,500 cc. of the antibody-laden blood from icteric foals, replacement with 2,000 cc. of compatible blood, and the transfer of the foal to a nurse mare. Where blood tests at parturition indicate impending icterus neonatorum, the foal should be placed on a nurse mare immediately.

During the 1946 to 1949 foaling seasons, 4 Thoroughbred mares among a band of 65 produced 9 foals with icterus neonatorum. The foaling histories of these mares are presented in table 1. In all cases, the foals were visibly sick from twelve to ninety-six hours postpartum and showed the typical symptoms of icterus neonatorum, *i.e.*, somnolence, inappetence, weakness, normal temperature, jaundice, and hemoglobinuria. In 1946 and 1947, the exact etiologic nature of the disease was not recognized, and the cases were treated with dam's blood, sulfamethazine, and penicillin with uniformly poor results. Death resulted in twelve to thirty-six hours from the onset of symptoms. In 1948, direct blood transfusions were made, using a saddle gelding as donor, but the foals were allowed to nurse their dams.

In the light of present knowledge, the volume and frequency of the transfusions were inadequate. Although there was some improvement after each transfusion, the ultimate results were not better than were those obtained in previous years. Alerted by the etiologic findings of the Kentucky workers,[1,2] a new plan of attack for the 1949 season was formulated by the author. It had been demonstrated[2] that the actively nursing foal reduced the antibody content of the udder secretion to less than 5 per cent of the original amount within twelve hours, that passive immunity is transferred

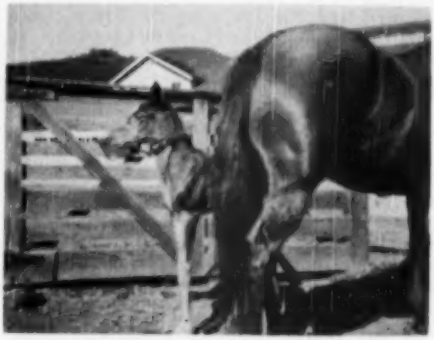

Fig. 1—Type of muzzle used to prevent icteric foals from nursing.

to the newborn foal only through the colostrum, and that a 5-day-old foal lacks the ability to absorb immune bodies through the gastrointestinal tract. Undetectable amounts of both hemagglutinins and hemolysins continue to be secreted by the mare for several weeks postpartum, but the real

TABLE I—Foaling Histories of Mares Producing Icteric Foals. Sires Are Indicated by Capital Letters

Year	Mare I	Mare II	Mare III	Mare IV
1943	colt by G	colt by A	not bred	not bred
1944	filly by A	filly by A	not bred	not bred
1945	barren	abortion by A	not bred	not bred
1946	i.n. by A*	colt by E	not bred	not bred
1947	i.n. by F*	i.n. by A*	abortion by A	colt by A
1948	i.n. by F*	i.n. by F*	colt by C	i.n by A*
1949	mare died	i.n. by F	i.n. by D	i.n. by B

*Foal died; i.n. = icterus neonatorum.

bulk of antibody transfer occurs during the first twenty-four hours. It was felt that if the foal were denied this antibody-laden foremilk, and the udder secretion altered to antibody-poor milk by hourly milking, the foal would be able to handle, without ill effect, the small amount of hemagglutinins and hemolysins secreted.

It was decided to type the blood of all the foals from mares known to have produced icteric foals previously and from all mares having their second or third foals regardless of the sire. Until the results of these blood groupings were known, the foals would be kept muzzled to prevent suckling. In those cases where the erythrocytes of the foal were agglutinated by the dam's serum, the foal was to be kept muzzled, the mare completely milked out every hour for forty-eight hours, and the foal bottle fed on a mixture of cow's milk and lime water (2:1). At the end of the 48-hour period, the foal was allowed to nurse the mare for five minutes and then remuzzled. If, after twelve hours, no symptoms of icterus neonatorum appeared, the foal was allowed to nurse at will, but was kept under continuous observation for a week. Figure 1 illustrates the type of muzzle used.

Blood tests indicated that 3 potential icteric foals were produced during the 1949 foaling season. The first foal born in 1949 (from mare III) arrived before the details of the plan were completed. Thirty-six hours postpartum, he was weak, listless, not nursing, and showed an icteric sclera and mucosa. The dam's serum agglutinated his erythrocytes in dilutions of 1:8. He was muzzled, given 500 cc. of compatible blood intravenously, fed the cow's milk-lime water formula, and his dam milked hourly. After twenty-four hours, he had brightened considerably and the jaundice was disappearing. He was allowed to nurse his dam for three minutes every four hours, and she was milked hourly for twenty-four hours. At the end of this time, the foal was allowed to nurse at will and made a rapid and complete recovery.

The second case was the foal of mare II which had lost her last 2 foals with icterus neonatorum. The foal was muzzled at birth, and the serum of the mare found to agglutinate the foal's erythrocytes in dilutions of 1:32. During the next forty-eight hours, the mare was milked hourly, and the foal bottle fed on the cow's milk-lime water formula. Twelve hours postpartum, the foal was given 100 cc. of compatible blood to compensate for the failure to obtain colostrum. The muzzle was removed, and the foal allowed to nurse at will forty-eight hours postpartum. Slight icterus was apparent twelve hours after the first nursing, but the foal did not develop further symptoms and the icterus disappeared shortly.

The success of the method in this case led to an attempt to shorten the muzzling and milking period in the third case from mare IV. This foal's red cells were agglutinated by the mare's serum in dilutions of 1:16. The muzzling and milking period was shortened to twenty-four hours instead of forty-eight hours. Within twenty-four hours after the foal began nursing at will, weakness, inappetence, and icterus were apparent. The muzzling and hourly milking were continued for forty-eight hours and, in addition, the foal was given 250 cc. of compatible blood every twelve hours. At the end of this period, the muzzle was removed and the foal nursed at will without further return of the icterus neonatorum syndrome.

SUMMARY

The results would appear, on a limited number of foals, to justify the reasoning involved in the muzzling and milking plan. The advantages of this method over the use of nurse mares are obvious, and it is certainly preferable to repeated transfusions. When icterus neonatorum is detected early, the method may be used therapeutically, as in case 1, in conjunction with transfusions of compatible blood. Its greatest value is probably as a prophylactic measure whenever hemolytic icterus is suspected or definitely indicated by early postnatal blood typings.

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Controlling Hemorrhage After Dehorning

Like most country practitioners, at certain seasons I get regular calls to control hemorrhage in cattle that have been dehorned by someone else. The trouble is usually caused by the horns having been taken off too high. As a result, the arteries are imbedded in horn matrix so they cannot be grasped with hemostats.

I have found the best way to handle such cases is to block the corresponding cornualis nerve and re-dehorn with a saw. The arteries are then exposed in soft tissues that will permit grasping and removal of the vessels with hemostats. This procedure is humane, effective, justifies a reasonable fee, and is a good practice builder. Almost any itinerant "dehorning specialist" can "pull veins" nowadays, but few of them can do nerve blocks to make the procedure painless for the animals.—*J. W. Bailey, D.V.M., Fort Atkinson, Wis.*

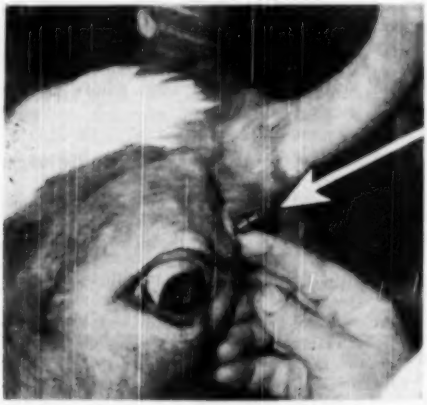
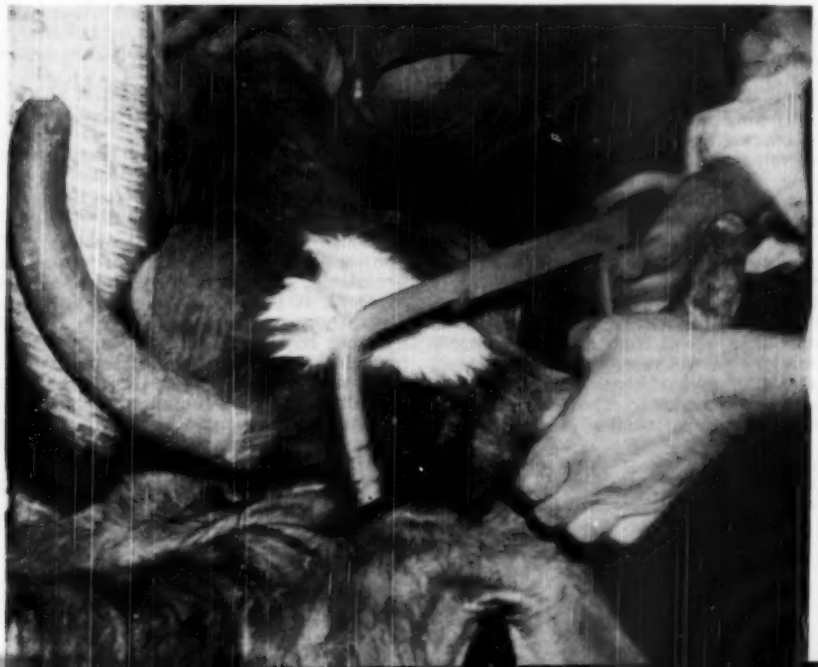


Fig. 1—Showing position and angle of needle for injecting anesthetic for the nerve block.

Fig. 2—Angle of the saw to achieve desirable head shaping.



Feline Diaphragmatic Hernia

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DIAPHRAGMATIC hernia, both congenital and acquired, in domestic cats must certainly be of origin as ancient as the diaphragm itself, and twentieth century students of mammalian anatomy are not so naive as to believe that they have discovered something which, heretofore, might have been overlooked by earlier zoölogists. Presumably, an intensive search might uncover numerous instances of this condition in the literature of many countries and, perhaps, of many centuries. Indeed, there are probably few experienced teachers of mammalian anatomy who have not seen one or more cases of diaphragmatic hernia in domestic cats in their own dissection laboratories, and the condition is not unfamiliar in veterinary medical clinics. Despite these facts, only during the past decade have a sufficient number of detailed reports become available in accessible literature to justify certain conclusions concerning the incidence of the anomaly, the extent of prolapse, and the sex of affected animals. These conclusions, based on the 15 cases of known sex personally seen or in the literature, are outlined in this paper. I shall also briefly characterize 2 new instances of diaphragmatic hernia which have been observed in our own laboratories of comparative anatomy.

ETIOLOGY

There is a sound basis for questioning the origin of cases of diaphragmatic hernia reported in the literature. Those reported to be of congenital origin may actually have been traumatic in origin, and vice versa. Some veterinarians consider most cases (involving both dogs and cats) as acquired (*c.f.*, Blakely and Munson,[1] "Rupture of the diaphragm is, in our experience, practically always a direct result of trauma. We have not recognized congenital diaphragmatic hernia, as yet, in our clinic . . ."). Nevertheless, developmental failure of portions of the diaphragm with ectopia of abdominal viscera is a recognized, and recognizable, anomaly. Furthermore, congenital weakness of diaphragmatic structures may be an antecedent of trauma. The term diaphragmatic hernia, as usually employed, comprises numerous conditions with respect to etiology and pathologic manifestations. Even the terms congenital and acquired (traumatic) do not suffice to indicate the etiology in any given case. Gruber[2] found it necessary to classify so-called diaphragmatic hernias into the following categories, which represent distinct entities with reference both to the origin of the condition and to the accompanying pathologic manifestations. I have taken liberties with the translation and have paraphrased where necessary:

Congenital hernias

1) Total or unilateral absence of diaphragm (agenesis).
2) Congenital formation of opening in the diaphragm with prolapse of viscera.
3) Congenital herniation through a previously intact diaphragm *in utero*.
4) Congenital paroesophageal hernia (through esophageal hiatus).
5) Congenital ectopia of viscera with subsequent interference in development of normal diaphragm.
6) Congenital and circumscribed saclike evagination of diaphragm.
7) Congenital unilateral total evagination of diaphragm.

Acquired hernias

1) Tearing of diaphragm *intra vitam* with or without prolapse.
2) Acquired formation of opening in diaphragm with prolapse.
3) Acquired hernia of diaphragm.
4) Acquired paroesophageal hernia (trauma involved).
5) Prolapse of viscera through hiatus esophageus (trauma possibly involved).
6) Acquired unilateral diffuse evagination.

From the foregoing classification of diaphragmatic insufficiencies, ruptures, sacculations, and associated alterations of the viscera, it is evident that not all cases of intrathoracic transposition of abdominal viscera require the same therapy, and that surgical procedures which may serve to adjust a condition of diaphragmatic rupture resulting from trauma may not be indicated, or may even be impossible, in at least some defects (as, for instance, congenital paroesophageal hernia).

The recognition of a congenital, as contrasted with an acquired, condition is not

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always simple. From the standpoint of the surgeon, distinguishing them is, perhaps, the least important consideration. In autopsy, recognition of causes assumes importance. Biopsy, accompanying surgery, might, alone or with other observations, serve to dispel doubt as to the etiology of those cases which are not readily interpretable. Gruber[9] suggested certain criteria useful in differentiating congenital and acquired hernias, and these are noted below. The list does not represent a translation, and I have omitted and added comments and altered the phraseology where it was believed to be useful. For Gruber's list, the original should be consulted.

Appearance of Opening.—With time, a rupture might become a round, smooth-bordered opening. The presence of fringes, fibrous processes, adhesions, and irregular border indicate probable acquired condition. Still, a congenital fissure may subsequently give rise to a rupture.

Association with Other Anomalies.—Agenesis or dislocation of kidney (often the left), ribs, anomalous phrenic nerve, cryptorchism (bilateral or unilateral), and other anomalies accompanying hernia indicate probable congenital origin.

Extent of Transposition of Viscera and Size of Opening.—Prolapse of numerous organs through a much restricted opening indicates a probable congential condition, especially in horses and cattle. Gruber indicates there is a tendency to more extensive prolapse in Carnivora (via a restricted aperture) because of the anatomic relations of the viscera in normal animals.

Histologic Findings at Fissure Ring.—Necrobiotic processes, inflammation, fragments, and rolled-up fiber ends indicate trauma. Presence of blood pigments in cavity is reliable identification of acquired condition in most cases, but absence of pigment does not negate the possibility of an acquired hernia. Even extended rupture gives little blood.

Quantitative Absence of Diaphragmatic Tissue.—If tissue is actually missing from what would otherwise be a complete diaphragm, congenital hernia is indicated. Gruber proposes measurements. In acquired conditions, the tissue should be present, despite rupture.

Age of Animal.—Gruber states that indisputable congenital cases are recognizable only in very young animals. Also implied is the idea that older animals sometimes are more susceptible to rupture (the horse is cited as an example).

Of the foregoing criteria, the most useful in determining the origin of a hernia would appear to be the first four.

Report of Two New Cases

Case 1.—Female, adult, pregnant, extensive developmental failure of central tendon of diaphragm. With the exception of the descending colon and the cardiac and fundic portions of the stomach, the entire abdominal portion of the alimentary canal was intrathoracic along with the tail and body of the pancreas, the entire liver, and the spleen. The middle mediastinum was pushed to the extreme left. The lungs were reduced in size and displaced dorsolaterally. Four fetuses recovered from typical uterine horns had progressed more than half way to term. Careful dissection of fetuses did not reveal a diaphragmatic anomaly in any of the four.

Case 2.—Male, adult, with herniation of stomach, except for pyloric region, through right horn of the central tendon, forming what appeared to be a cul-de-sac in right pleural cavity. Relationships were not studied in detail—may have been traumatic in origin, the result of a congenital weakness, or both.

Extent of Prolapse.—The 2 cases herein reported represent, by coincidence, the two extremes in the extent of prolapse exhibited in diaphragmatic hernia in the cat. In an earlier paper,[12] I outlined, on the basis of reports which had come to my attention, what I considered maximum and less-than-maximum displacement of the abdominal contents in such hernias. Since publication of that paper, a more severe case of hernia was observed and reported in detail by Newcomer (1949),[13] who pointed out the possibility of the involvement of the greater part of the liver, a condition more severe than I had anticipated on the basis of earlier reports. For a detailed description of a case which, we must assume, represents maximal prolapse, reference should be made to the report of Newcomer.[13]

Distribution Between Males and Females

Sex of Affected Animals and Genetic Desiderata.—Investigators who have been interested in furthering the knowledge of congenital diaphragmatic hernia in the cat and who, therefore, have recorded their own observations with respect to the anomaly have, apparently, been primarily interested in the ontogenetic or phylogenetic basis for the condition and in the aberrent anatomic manifestations. Recently, however, as a result of what must be regarded as entirely coincidental circumstances, attention has been focused on the question as to whether congenital diaphragmatic hernia might be a sex-linked character, and the genetic

background for the anomaly has been a subject of thought, either implied or expressed in the literature. A survey of 15 cases (of known sex) brought together herein for the first time, and representing all detailed reports of prolapse (both traumatic and congenital) with which I am acquainted (but not purporting to represent all published cases), reveals the distribution of this condition between males and females in the 15 cases considered. The following list of cases is arranged chronologically with respect to the date of the published report:

1927 Hunter* (pregnant)	♀
1930 Plagens and Bradbury[14]	♂
1934 Potter[16]	♂
1937 Rifenburgh, *et al.*[17]	♂
1940 Day[4]	♀
1942 Shawhan[20]	♀
1942 Wolfe, *2 cases*[21]	♀♀
1945 Griffin[8]	♂
1945 Kent[12]	♂
1945 Reed[18]	♂
1948 Kramer[11]	♂
1949 Newcomer[15]	♂
1949 Kent, *2 cases* (herein reported)	♂ (pregnant)♀
1910 Waldmann[22] "Katze"	?
1923 Bru[3] "Katze"	?
1928 Brisco[2]	?
1931 Krause "Katze" (quoted from Gruber[9])	?

*Remarks before the Anatomical Society of Great Britain and Ireland, recorded in the Proceedings of the Society, Feb., 1927 (*Cf.* Beattie, p. 9).

For the purpose of the present discussion, all cases of intrathoracic transposition of abdominal organs (both traumatic and congenital) have been included in the list. This arbitrary use of the data is not justified, excepting in so far as the following considerations are pertinent: (1) Difficulty is encountered in recognizing congenital conditions as contrasted with acquired conditions. (2) The probability exists that any case of true acquired hernia included herein (as, for instance, Kramer's[11]), involving a given sex, would be cancelled by a case of acquired hernia in a member of the opposite sex, and the ratio of males to females exhibiting genuine congenital hernia would not be artificially altered. One must assume, of course, that males and females are equally subject to injuries which might cause diaphragmatic hernia totally unrelated to any congenital predisposition to prolapse. Nevertheless, the conclusions herein reached are tentative, because of the nature of available information.

From a study of the distribution between the sexes in the 15 cases of known sex (males:females=3:2), one would not conclude that the character is sex-linked. Case 1, reported herein, likewise provides some evidence concerning the nature of the genetics of hernia, *viz.*, it appears to behave like a recessive character, since all 4 of the siblings of an affected mother were apparently normal with respect to the character.** The 2 cases reported by Wolfe[21] are of interest at this point since the cats came from neighboring farms (hence may have been related) and both were females, contrary to expectation in sex-linked characters.

GENETICS

Feldman,[7] discussing the inheritance of congenital transposition of the viscera (which may be similar to diaphragmatic hernia genetically) in human beings, pointed out that, of 539 children (119 sibships) of affected parents studied by E. A. Cockayne, the ratio of normal to affected siblings was roughly 3:1. He further observed in his own studies that the anomaly occurs most frequently in children of parents each of whom is normal (presumably heterozygous with respect to the condition). This and other evidence cited by him indicates, he believes, that congenital transpositions of viscera in man is a recessive Mendelian character. It is likely that congenital diaphragmatic hernia in the cat is, likewise, an autosomal recessive character.

INCIDENCE

Cockayne (Feldman)[7] observed that, of 53 sibships exhibiting transposed viscera, 11 per cent were from consanguineous parents, while in the general population less than 1 per cent of the population may be traced to consanguineous parents. Thus, consanguinity apparently increases approximately tenfold the likelihood of the exhibition of transposed viscera. Such a relationship of consanguinity to exhibition of diaphragmatic hernia may conceivably obtain.

The incidence of diaphragmatic hernia in human beings has been variously estimated to range from 1:18,000[5] in the general population to as high as 2.9 per cent among

**I regret that I did not have the foresight to determine the sex of the siblings. However, it is conceivable that the four normal fetuses in case 1 might have subsequently developed traumatic hernias due to possible congenital diaphragmatic weakness, had they lived.

patients subjected to x-ray examination of the gastrointestinal tract.[6,10] The literature covering the latter situation is abundant. Assuming that the incidence in population of sheltered cats would be about the same as in the general population of man, the incidence of diaphragmatic hernia among cats picked up by collectors for disposal to biological supply houses (among which feline populations consanguinity would abound) should be considerably higher than the incidence in the general population among mankind—perhaps ten times higher, or approximately 1:1,500, at least in some *Felis domestica* populations, with variations probably occurring geographically. In my own experience, of 500 cats dissected, 3 were found to exhibit the anomaly. On the other hand, Wolfe has examined 1,500 cats since finding the 2 cases from neighboring farms and observed no additional cases. Among veterinarians, there is some debate as to the frequency of diaphragmatic hernia (congenital or traumatic). Some veterinarians report having seen it only once or twice, others as many as a dozen times a year.[18] The figure 1:1,500 may not be inaccurate for some populations, at least. It may conceivably occur as often as 1:500 in some regions.

Beattie, in 1927, read a paper on "Diaphragmatic Hernia in Primates" before the Anatomical Society of Great Britain and Ireland† in which he discussed the incidence of diaphragmatic hernia among lower animals. He stated that 674 mammals had died at the Prosectorium of the Zoölogical Society of London in the two previous years and autopsy of all 674 revealed only 3 cases of diaphragmatic hernia, 2 of which were in animals of the family Felidae. He further stated that

> an examination of the diaphragm of all Felidae dying in the menagerie disclosed the fact that in many of these animals a definite hiatus was noted between the crural and costal parts of the diaphragm. The peritoneum was separated from the pleura by some areolar tissue. This hiatus, although by no means constant (it occurred in 5 of 12 Felidae examined) varied from a slitlike opening a few millimeters wide to a triangular opening nearly a centimeter in greatest length and 4 mm. wide. All were on the left side.

Diaphragmatic hernia may be much more common, therefore, in the domestic cat than in other small domestic mammals.

The veterinarian has an exceptional opportunity to contribute to knowledge of the genetics of diaphragmatic hernia in small animals, if so predisposed. Adequate statistics (arrived at through systematic x-ray examination) concerning the incidence of prolapse of abdominal viscera into the thoracic cavity on the part of litter mates, and on the part of one or both parents when at least one member of a litter is observed to be affected, will provide the necessary basis for valid conclusions concerning the inheritance of this anomaly. Out of the veterinary clinics may thus come a contribution to the basic science of genetics. To be noted is the urgent necessity that all litter mates be examined if possible, and, where the latter is not practicable, the total number in the litter should be recorded as part of the data, even though not all members of the litter are available for inspection. The sex of all animals examined is also pertinent.

†Proceedings of the Society, a supplement to the Journal of Anatomy, *61*, (1927):488.

SUMMARY

Two new cases of diaphragmatic hernia are herein reported for the first time. One of these cases is apparently of congenital origin, the other may be either congenital or traumatic.

The extent of prolapse in diaphragmatic hernia has been discussed in earlier literature, and reference is made to pertinent reports.

Congenital diaphragmatic hernia appears, on the basis of present data, to behave like a simple recessive character, without sex-linkage.

Incidence of this anomaly may be in the ratio of 1:1,500 for some populations, and as high as 1:500 in some regions.

Diaphragmatic hernia, both traumatic and congenital, may be more common in domestic cats than in other small domestic animals.

Opportunity to extend the frontiers of knowledge in the basic science of genetics is afforded veterinarians so predisposed through systematic examination of litter mates and parents when a case of diaphragmatic hernia is presented in the clinic.

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Spaying Heifers

The spaying of heifers for anticipated gains in the feedlot and pasture, once extensively practiced in the western part of the United States, was based on imagination rather than reality, according to trials conducted by Dr. George H. Hart of the University of California (*U.P Bull.*, Jan., 1949).

The first trial in 1938 comprised 13 bred, 11 open, and 13 spayed heifers, all fed and studied for 118 days. The second trial with 14 bred, 13 open, and 13 spayed heifers were fed and studied for 150 days. The slaughter data revealed that there was no significant difference in the three groups. Pregnancy did not materially reduce dressing values and the gains of the three groups were practically the same. There is but one conclusion to be drawn from this apparently faultless investigation—tradition has played tricks for a long while.

Anavenol, New Equine Anesthetic

Beta-naphthoxyethanol, known commercially in England as anavenol, is reported by British investigators as useful for anesthesia of short duration in horses (*Vet. Rec.*, Aug. 13, 1949, and Dec. 3, 1949). It is not recommended for other species of livestock or pets. It is given by slow intravenous injection, as a 10 per cent suspension. A dose of 30 to 50 mg. per kilogram (18 to 40 gr./cwt.), administered to the patient in a standing position, causes prompt collapse without excitement and produces light surgical anesthesia lasting ten to fifteen minutes. A deeper plane is produced by doubling the stated dose. It can be used in combination with chloroform, chloral hydrate, or barbiturates. Although of low toxicity, the drug must be given slowly to prevent cardiovascular disturbances and respiratory arrest.

Wound Healing Not Speeded by Antibacterial Agents

Antibacterial substances, applied locally, cannot be expected to aid wound healing, useful though they may be in preventing infection of the wound. Guinea pig tests with sulfanilamide, sulfathiazole, sulfadiazine, penicillin ointment, and nitrofurazone (furacin) showed that the first two actually delayed healing, while wounds treated with any of the other three took just as long to heal as those of controls (*Cur. Med. Digest, Nov.*, 1949).

Dentistry in Aged Dogs

It is dangerous to pull too many teeth at once or to remove all tartar from a large area at one time in old, debilitated dogs, many of which are likely to be suffering from kidney damage. In such patients, generalized spirochetosis may follow extensive work on the infected areas, with fatal results. Application of 10 per cent chromic acid to the affected area and a therapeutic dose of penicillin in one of the delayed absorption mediums is recommended, plus a week of rest to allow healing between major extractions and extensive tartar removal.—*W. F. Irwin, D.V.M., Iowa Vet., Nov.-Dec.*, 1949.

A Method of Bleeding Chickens from the Heart

M. S. HOFSTAD, D.V.M., M.S., Ph.D.

Ames, Iowa

THE METHOD of heart bleeding described here has been used successfully since 1943. The technique is not designed to replace wing-vein bleeding but rather to supplant it whenever it is desirable or advantageous. In a poultry diagnostic and research laboratory, it is frequently necessary to bleed chickens to obtain a good supply of serum for serologic or chemical studies. Some advantages of the method described herein are that it is rapid and does not require an assistant. The operation can be done with comparative safety. Dr. M. J. Swenson,* of the research institute staff, recently used the method for the first time to bleed a group of experimental chickens 4 to 12 weeks of age for blood studies. Of 126 birds bled, only 1 died during the bleeding process. The author has experienced less than 1 per cent mortality using this method. Birds that die usually do so during, or shortly after, the bleeding.

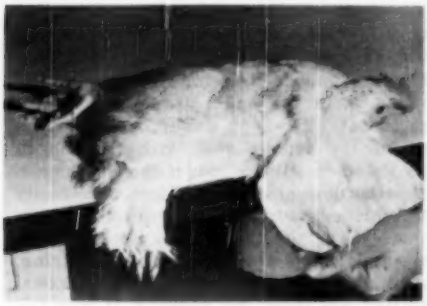

Fig. 1—Chicken lying on table with wings held down over edge of table.

METHOD

For chicks, a 20-gauge, ¾-in. needle is satisfactory. For birds 10 weeks of age or over, an 18-gauge, 2-in. needle can be used.

It is desirable to have a table or crate about the height of the waistline of the operator. The bird is grasped by the wings and legs and placed on its right side. The right wing falls over the edge of the table and the left wing is pulled down in apposition to the right wing. The operator then holds the bird by pressing the wings against the edge of the table with his body, leaving the hands free to do the bleeding (*see* fig. 1 and 2).

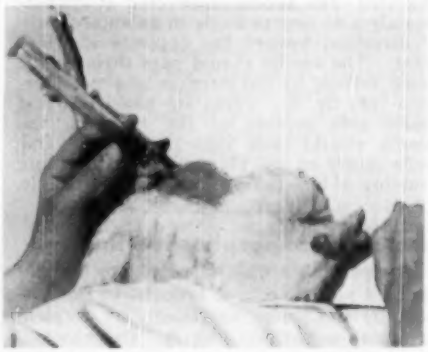

Fig. 2—Operator's view of bird during bleeding with body of operator holding the bird's wings against edge of table. The point of puncture and angle of insertion are shown.

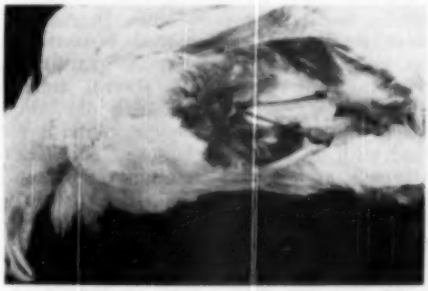

Fig. 3—Sternum of chicken exposed to show angle formed by the sternum and metasternum at point of needle.

The right hand is used for holding the syringe with needle attached, inserting the needle, pulling the plunger, and, finally,

From the Veterinary Research Institute, Iowa State College, Ames.

*Unpublished data for Ph.D. thesis.

The author expresses appreciation to Mr. W. R. Bauriedel for taking the photographs and to Mrs. Lorrie Gardner for her assistance.

withdrawing the syringe and needle. The left hand is placed with the lower part of the hand on the bird so that the lower three fingers are between the abdomen and thigh of the bird. This assists in restraining the bird and also supports the hand holding the syringe. The thumb and index finger are free to hold the syringe while the right hand pulls the plunger to draw the blood.

The site of the puncture is about an inch above and posterior to the point of the keel (fig. 2). The needle is directed at approximately a 45 degree angle in an anteromedial direction toward the opposite shoulder joint. The needle should pass through the angle formed by the sternum and metasternum (*see* fig. 3). Since the heart lies just under this portion of the sternum, the needle should pass into the heart. One pulls slowly on the plunger, since too rapid drawing of blood causes the bird to struggle.

Unusual Intussusception in a Dog

The patient, a male mongrel Fox Terrier about 4 years old, was brought to the hospital by the police, supposedly an accident case with no definite history. On examination, the patient appeared to be quiet and lifeless, preferring to stand perfectly still. The eyes were dull, temperature normal, back slightly arched, and abdominal palpation negative. Some dehydration was evident, mucous membranes appeared normal, breath was foul, and later in the day vomiting of bile commenced. The patient was immediately placed on saline and dextrose, given a high enema with negative results, and held under observation.

The next day, all symptoms were aggravated. Roentgenograms were negative. There was no desire for food, but water was taken frequently in small quantities with vomiting continuing several times during the day. By the fourth day, the patient was in very poor condition and now stood with all four feet bunched, the back extremely arched, and the chin resting on the floor of the cage. Palpation at this time disclosed a soft elongated mass in the abdomen, and it became apparent that an immediate laparotomy was indicated.

The abdomen was opened in the usual manner and, on examination, over a foot of the small intestine was found to be accordion pleated, congested, and traversed by a hard, taut, cordlike structure, easily palpable through the intestinal wall. Just anterior to the pleat, we found a 4-in. intussusception, just started, and easily reduced. Just posterior to the pleat, a small hard mass was easily palpated, but quite immovable. With one hand in the abdomen, the cordlike structure was traced back to the empty stomach.

At this point, the patient commenced to show symptoms of respiratory collapse. When the assistant drew the tongue forward prior to inserting the oxygen tube, the intestine still held by the operator was pulled from his grasp. When the intestine was pulled posteriorly, the tongue was pulled from the assistant's grasp. Immediate and thorough examination of the tongue disclosed a deep, necrotic laceration extending across the base of the frenum. Probing the wound brought to light a loop of string imbedded around the base of the tongue, with the ends disappearing down the throat. The loop was slipped over the end of the tongue and, with traction in the abdomen, slipped down the esophagus. The accordion-pleated intestines were easily straightened out, and an enterotomy performed over the mass that was posterior to the pleat. It proved to consist of string, grass, and cellophane. On withdrawal through the intestinal opening, it was followed by a 1-ft. length of doubled string, the end of which had been looped around the base of the tongue. After routine closure of the incision, the patient was placed on saline, dextrose, and amino acids. Recovery was slow but uneventful, and the patient was discharged in good health two weeks later.

The explanation for the accordion pleat in the small intestine, while quite evident, is rather interesting. Since the foreign mass could not progress further down the intestine after getting to the "end of its rope," peristalsis worked the intestine anteriorly. When there was no more room for pleats, the intussusception commenced anteriorly to the pleats. The appearance of the intussusception was the first indication of the advisability of performing a laparotomy.—*Fred Keefe, V.S., B. V. Sc., Rowley Memorial Hospital, Springfield, Mass.*

Torsion of the Uterus in Goats.—The supposed rarity of torsion of the uterus in goats is more apparent than real. Its occurrence must be taken into account in caprine obstetrics. The twist tends to be oblique or almost vertical (cornual), rather than horizontal, owing to the disposition of the broad ligaments.—*From Bull. Soc. Sci. Vét., Lyon.*

CLINICAL DATA

Clinical Notes

A frothing salivary reaction that occurred in cats on antihistamine therapy (neohetramine) was prevented by dissolving the drug in syrup.—*J. D. Schaffer, D.V.M., Vet. Med., Jan.*, 1950.

Some Middlewest practitioners say they are saving more erysipelas-affected swine with serum and penicillin than they ever did with serum alone. The penicillin dosage is usually 500,000 units in oil for shoats weighing 100 lb. or more.

Symptoms of methoxychlor poisoning usually are limited to depression, although tremor may be seen in chronic cases. The estimated lethal dose is much higher than that of other commonly used insecticides. —*What's New, Jan., 1950.*

Experiments on premilking at West Virginia University led to these conclusions: (1) It did not reduce the amount of congestion or the time it took for udders to become normal; (2) premilked cows took longer to reach their peak of production and held the peak longer after reaching it.—*Western Dai. J., Dec.*, 1949.

The prevailing belief that antibiotics are worthless in viral infections needs reëxamination. Large doses of penicillin are reportedly beneficial in the treatment of human psittacosis and viral pneumonia. Important predictions are also being made for aureomycin.

Poisoning from Treated Grain.—Signs of poisoning appear slowly in pigs fed leftover seed grain treated with fungicides, such as mercury. About three weeks after being started on the grain, they walk limber-legged and bump into objects, and die. Deaths continue long after the treated grain is removed from the ration, due to cumulative action of the mercury. Pigs usually do not respond to treatment.—*R. M. Hofferd, D.V.M., Iowa.*

One consistent postmortem lesion of infectious hepatitis is a greatly enlarged edematous gall bladder.—*R. E. Ruggles, D.V.M., Illinois.*

Pending further research, *Corynebacterium pyogenes* infection of cattle must remain in the class of miscellaneous genital infections of unknown importance.—*C. A. V. Barker, D.V.M., Ontario.*

Staphylococcosis in poultry is usually characterized by inflammatory swelling of the foot or wing joints, although cutaneous and navel lesions occasionally are seen.—*Austral. Vet. J., Oct.*, 1949.

Occasionally, anaplasmosis may be transmitted to calves *in utero*, but this happened only once in 17 calves in a series of experiments reported in *Technical Bulletin*, 66, Kansas State College, Manhattan. Blood transfusions at the rate of 5 cc. per pound of body weight were the most effective means of treatment found.

BHC Roost Paint.—A roost paint containing 1 per cent of the gamma isomer of benzene hexachloride (BHC) apparently killed all lice in roosts and on the birds without distorting the flavor of poultry meat or of eggs laid immediately after delousing, the U.S. BAI reports (Jan. 8, 1950). Seventy people took part in the taste tests, and not one of them was able to detect a BHC taint. The roost treatment, applied in the fall, was said to be completely effective through the winter.

Rumen Content as a Poultry Feed.—In view of the established fact that the ingesta of the normal rumen is rich in riboflavin, pantothenic acid, thiamine, pyridoxine, it is a valuable vitamin supplement for the ration of poultry. In fact (*World's Poult. Sci. J.*, April-June, 1949), the dried ingesta contains four times as much riboflavin and pantothenic acid as poultry require, according to analyses made by Dr. Paul R. Frey of Colorado A. & M. College.

Hyperkeratosis (X-Disease) in Illinois

C. C. MORRILL, D.V.M., M.S., Ph.D.

Urbana, Illinois

HYPERKERATOSIS, or x-disease, while apparently not responsible for a large segment of disease losses in the cattle of the United States, may cause serious losses in a herd which it strikes. Reports indicate that, in some sections, herds have been decimated and dispersed because of the effects of the disease. This has happened in few instances in Illinois, but in the southern states the disease apparently has assumed a more malignant form and constitutes a more serious problem than elsewhere. Reports also indicate that the disease has been recognized in 37 or more states.[1]

The morbidity, while unpredictable, may be high. Young cattle appear to be more susceptible than older ones and the death rate among them is higher. While in the U. S. Bureau of Animal Industry report,[1] beef cattle were more frequently involved than dairy animals, the disease has been seen almost equally among the two types in Illinois.

The cause, as indicated by the name "x-disease," is unknown. Although there is little evidence that it is caused by an infectious agent, the possibility has not been completely eliminated. So far, attempts to correlate the occurrence of hyperkeratosis with any particular soil types, fertilization practices, use of certain insecticides or fungicides, feeding of rare minerals, or ingestion of poisonous plants have failed. The notion that DDT, benzene hexachloride,

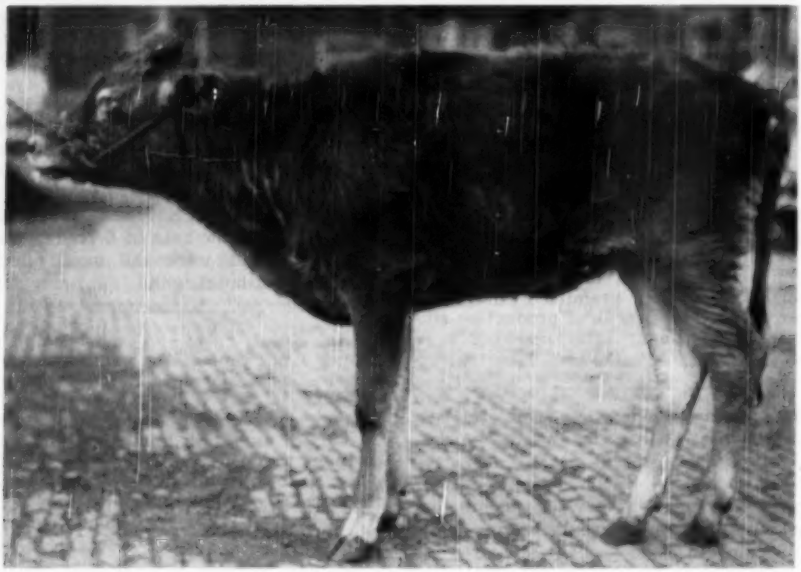

Fig. 1—Hyperkeratosis in a grade dairy heifer—the first recognized case in Illinois. Note poor condition and wrinkling of thickened skin on neck.

A digest of remarks made in connection with presentation of a film depicting symptoms and lesions of x-disease before the Section on Research, Eighty-sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1950.

Professor of Veterinary Pathology and Hygiene, College of Veterinary Medicine and Professor of Veterinary Research, Illinois Agricultural Experiment Station, University of Illinois, Urbana.

or chlordan are involved can not be accepted. The disease was seen at least as early as 1941,[2] which was before these chemicals came into general use. Furthermore, they (especially DDT) have been widely used on many animals over extended periods without causing keratosis.

The first case recognized in Illinois was seen in January, 1948, when a grade dairy heifer (fig. 1) from a herd of 3 cows and 10 heifers was submitted to the Department of Veterinary Pathology and Hygiene for diagnosis. Four young animals had already died and symptoms of the disease were present in all but 1 of the remaining animals. History, symptoms, and lesions conformed rather closely to those reported by Olafson.[3] During 1948, animals from 12 outbreaks were found by members of the staff of this College to show clinical or pathologic manifestations, or both, indistinguishable from those of hyperkeratosis. In some cases, one fourth to one half of the animals in the herd were affected; in others, only a few animals out of herds of as many as 40 or more showed evidence of the disease. Since recognition of the disease in Illinois, it has become evident that the condition might have been seen as early as 1941 (fig. 2) at this laboratory.

Fig. 2—An idiopathic dermatosis observed in 1941—probably a case of what is now called hyperkeratosis.

Fig. 3—Photophobia, lacrimation, and keratosis with loss of hair.

Fig. 4—Salivation and lacrimation in hyperkeratosis. In this case, secondary infection caused conjunctivitis and blepharitis also.

SYMPTOMS

The symptoms generally observed are watery discharge from eyes and nose, poor appetite, loss of flesh, salivation, depression, progressive thickening of the skin with or without loss of hair, productive or thickened areas on the muzzle and in the mouth, weakness, and diarrhea. Pregnant animals may abort. Watery discharge from the eyes is often one of the first symptoms noticed and may become quite profuse (fig. 3). The appetite is generally poor but may fluctuate somewhat. Loss of flesh is not constant but has been observed in our animals which have died. In three outbreaks in highly conditioned beef animals, there was loss of neither flesh nor appetite. In such cases, the chief symptom has been that of keratosis. Whether this modification is due to a variation in causative factor(s), in host resistance, or in both, is not clear. (This type of case generally involves only a few animals and may represent a condition distinct from hyperkeratosis.) Salivation is common (fig. 4) though generally not profuse. In rare cases, animals may die without showing external keratosis, yet may have some internal lesions. Diarrhea is not at all constant.

In addition to the external keratosis

(fig. 2), internal lesions may be observed. Most common are proliferative changes in the mouth (fig. 5), especially on the tongue, buccal mucosa, and dental pad.

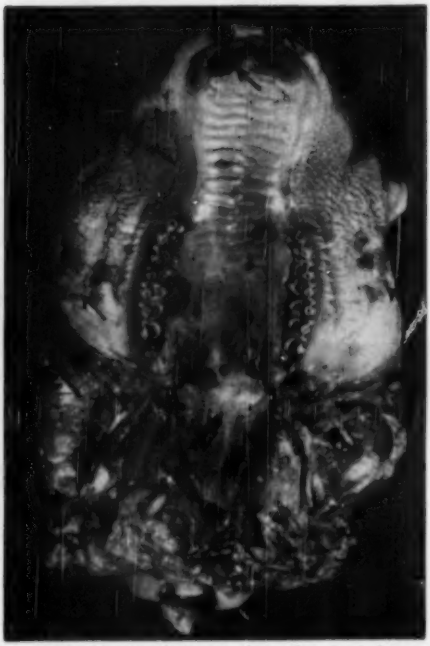

Fig. 5—Proliferative lesions in the oral cavity in hyperkeratosis. Note especially the involvement of the buccal papillae, dental pad, and inferior margin of the muzzle.

Fig. 6—Oral cavity in a case of hyperkeratosis of cattle. Note here the ulcer-like lesions in the pharynx and the complicating abscess on the tongue.

Ulcerative changes may also occur (fig. 6). The oral lesions are sometimes accompanied by the formation of abscesses especially in the tongue (fig. 6). Occasionally, the proliferative or ulcerative lesions extend into the esophagus (fig. 7) or abomasum. Thickening of the walls of the larger bile ducts and nodular to cystic protuberances into the lumens of the common and cystic bile ducts (fig. 8) and gall bladder are sometimes visible to the naked eye. Subacute to chronic nephritis may be present, manifested by grayish white streaks in the renal cortex, extending perpendicular to the capsule (fig. 9).

Fig. 7—Esophagus in hyperkeratosis of cattle. In this case, proliferative lesions were most pronounced in the thoracic portion. Discoloration of pharynx and entrance to esophagus was apparently a postmortem change.

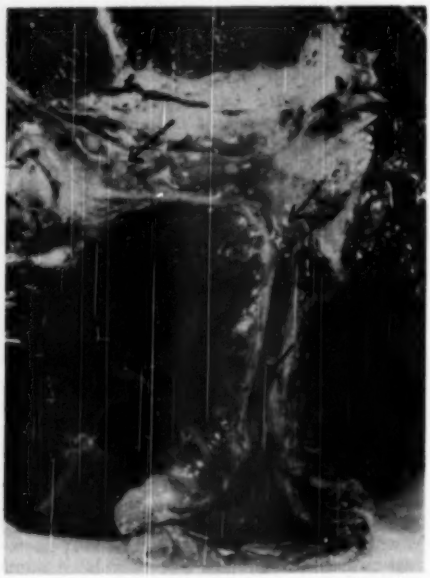

Fig. 8—Cystic and common bile ducts in hyperkeratosis of cattle. Note nodular to cystlike protuberances in lumens of ducts.

TREATMENT

More information regarding the cause(s) of hyperkeratosis is needed in order that (1) preventive measures can be devised, (2) effective therapy can be developed, and (3) a name with etiologic significance can be applied. Until such information is available, good care, proper nutrition, and symptomatic or palliative treatment are

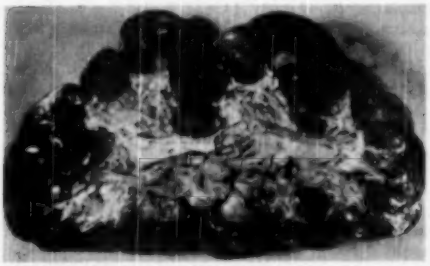

Fig. 9—Bovine kidney in hyperkeratosis. Note grayish white streaks in cortex, caused by fibrosis and dilatation of collecting tubules.

indicated. Meanwhile, veterinarians are urged to avoid the use of the term "x-disease" as a diagnostic waste basket; in other words, they should not be hasty in making a diagnosis of x-disease just because there is a skin disorder but, rather, be critical in differential diagnosis. They are also urged to contact local regulatory and laboratory personnel who may be interested in collecting all available clinical data for analysis.

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Pesticides

Several thousand newer chemicals which act as economic poisons in controlling insects, fungi, and rodents may be grouped in a class called pesticides. New chemicals are being added to this list at such a rate that it is almost impossible to keep an abstracting service up to date with respect to the chemical constitution, the method of commerical production, and the methods of usage of these pesticides.

It is expected that representatives of the various groups studying pesticides will maintain close contact with the veterinary profession in order to establish the health hazards and methods of reducing them, which is an essential part of research into the safe use of such material.—*Vet. Extension Quart. 114, April 3, 1949.*

What Is Your Diagnosis?

Recently, I saw two very queer cases on Aberdeen Angus calves weighing 200 to 250 lb. They have hornlike growths over the backs. One has similar growths on its side, neck, and ventral portions of the body. There are no lesions in the mouth.

These growths look almost exactly like the ones that are found on the eyelids of old Hereford cattle. They closely resemble small horns.

Your diagnosis will be appreciated.—*John W. Smith, D.V.M. (KSC '45), Eureka, Kan.*

Serum, Plasma, Vaccine

"Introduction to the Study of Serum" by Brig. Gen. Brocq-Rousseu, retired veterinary officer of the French Army, again reminds the reader that the word *serum* is commonly misused. The General says:

> Before discussing a thing, it is important to define it in order to keep the discussion on the subject at hand. Thus, in default of a definition, writers use the word *serum* when *plasma* is meant. Some have defined *serum* as "plasma in circulation;" some define it as centrifuged plasma; and others as "the liquid remaining after blood is defibrinated." . . . And often, one sees *serum* used in lieu of *vaccine*. Even injected normal salt solution has been called *physiological serum*.
>
> In this manner, writers create a confusion of terms none of which is close to the fluid here discussed, because *serum* correctly defined is "the liquid exuded in natural coagulation of blood" and, therefore, is not applicable to any other substance.

The author goes on to say that normal serum is derived from the normal animal. On the other hand, if the blood of an animal is prepared by injection for therapeutic purposes, it should then be designated as *therapeutic serum*. The transient presence of antigens, antibodies, antitoxins, spontaneously acquired, does not change the principle of the definition.

Procaine penicillin may be administered safely with sulfadiazine, sulfathiazole, and sulfapyridine, but it may be antagonistic toward sulfanilamide.—*J. Am. Pharm. A., Oct., 1949.*

Eperythrozoonosis in Swine

A Preliminary Report

EARL J. SPLITTER, D.V.M., and RICHARD L. WILLIAMSON, D.V.M.

Manhattan, Kansas, and Essex, Iowa

A DISEASE entity characterized by generalized icterus and acute anemia has been recognized for a number of years in growing swine in the middlewestern states. The condition was first reported by Kinsley,[1] in 1932, and it since has been reported by other investigators. Because of the similarity to bovine anaplasmosis, the condition has been known as "anaplasmosis-like disease of swine" or "ictero-anemia of swine." The etiology of the disease remained unknown.

The purpose of this paper is to report the presence of a specific microörganism, a species of the genus Eperythrozoon, found associated with three separate outbreaks of an acute ictero-anemia in swine. Evidence has been obtained to indicate that this blood parasite is the causative organism of the disease.

LITERATURE

Blood parasites of the genus Eperythrozoon (*Eperythrozoon coccoides*) were first observed by Schilling[2] in splenectomized mice. In 1934, Adler and Ellenbogen[3] reported the presence of Eperythrozoon in cattle in Palestine. They found the organism associated with *Theileria annulata* and Anaplasma. Neitz, Alexander, and Du Toit[4] reported, in 1934, a species of Eperythrozoon in African sheep. In classifying the genus Eperythrozoon, these workers suggested that the organism is closely related to Bartonella, Grahamella, and Anaplasma. Their selection of this classification was based on morphology, symptoms, and course of the disease process. A common symptom resulting from these organisms is an anemia characterized by degenerative and regenerative changes in the blood. These changes occur sometime after the appearance of the parasite, in a manner similar to that observed in infections with Anaplasma. Neitz[5] (1940) reported observations on eperythrozoönosis of African cattle. The parasite appeared to be identical to *Eperythrozoon wenyoni* of Palestine cattle.

Lotze and Yiengst[6] (1941) first reported the presence of *E. wenyoni* in cattle in the United States, and found it to be associated with bovine anaplasmosis. Jensen[7] (1943) found the same organism in mixed infections with anaplasmosis, and in calves unassociated with anaplasmosis in Louisiana. Jensen also found *Eperythrozoon ovis* as an apparently common blood parasite of native Louisiana sheep. His work corroborated that of Neitz[5] in demonstrating that the parasite is capable of producing an acute, febrile anemia and icterus in susceptible, unoperated sheep. Dykstra and coworkers[8] (1948) reported the presence of *E. wenyoni* associated with bovine anaplasmosis in Kansas. Splitter[10] has found the organism to be a common blood parasite of Kansas cattle unassociated with anaplasmosis. In naturally infected, splenectomized calves, he has observed an acute ictero-anemic condition indistinguishable from acute anaplasmosis except by blood film examination. One case terminated fatally. Splitter[11] found *E. ovis* to be an apparently common blood parasite of native Kansas sheep. A subclinical anemic condition has been produced in susceptible, unoperated sheep.

PROCEDURE

Clinical data and blood films from the Iowa outbreaks were assembled by the junior author, and forwarded to the laboratory at Manhattan, Kan. Pigs showing symptoms and those normal animals that were reëxamined were ear-tagged to provide proper identification. No attempts were made to conduct blood counts on the Iowa pigs, other than 1 shipped to the laboratory; however, Tallqvist readings of the hemoglobin were made on animals showing symptoms.

In a herd under investigation at Manhattan, blood films were first obtained from the entire group of 17 pigs. Hematologic studies were then made on alternate days on 3 pigs, 2 of which showed a relatively heavy parasitic infection, and the third a very mild degree of infection. Blood examination of these 3 pigs was continued for twelve days.

Blood films were prepared for microscopic examination by staining with Giemsa stain. The blood picture, as observed in stained films, was taken as a rough measurement of the animal's response to erythrocytic destruction. Although polychromatophilic and varying numbers of Howell-Jolley bodies are nor-

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Contribution No. 3, School of Veterinary Medicine, Kansas State College, Manhattan.

Assistant professor of pathology, School of Veterinary Medicine, Kansas State College, Manhattan (Splitter); Practitioner, Essex, Iowa (Williamson).

mally present in swine of the age groups studied, the abnormal increase in numbers of these immature cells can be observed rather easily in clinical and subclinical cases of the anaplasmosis-like condition.

A positive diagnosis of eperythrozoönosis was made on demonstration in stained films of the typical ring-shaped structure of Eperythrozoon. The organism is usually located supracellularly upon the erythrocyte, or occasionally is free in the intercellular spaces. An arbitrary means of indicating the degree of parasitic infection was used in these studies and is designated as follows: rare, one Eperythrozoon structure in five or more microscopic fields; scarce, one structure in one to five microscopic fields; occasional, approximately 10 to 20 per cent of the erythrocytes containing at least one Eperythrozoon; frequent, approximately 50 per cent of the erythrocytes containing eperythrozoa; numerous, approximately 80 to 90 per cent of erythrocytes containing eperythrozoa; very numerous, all erythocytes infected and some completely covered with parasites; extremely numerous, all erythrocytes infected and many completely covered with parasites.

CLINICAL DATA

Herd A.—This herd, located near Shenandoah, Iowa, consisted of 77 pigs, a number of sows, and a boar. On May 9, 1949, the pigs were vaccinated with hog cholera virus and antiserum. Approximately four weeks later, 2 sows and 2 pigs sickened and died. Postmortem examination of the dead pigs revealed a generalized icterus; thin, watery blood; a greatly enlarged, friable spleen; and an orange-yellow discoloration of the gastrointestinal contents. No lesions suggestive of hog cholera were observed in these pigs, or in pigs that died later.

Between June 1 and August 1, a total of 39 pigs died with this condition. Symptoms were identical to those of the icteroanemia or anaplasmosis-like condition described in the literature. A sick pig from this herd was shipped to a diagnostic laboratory on July 13. The laboratory report stated that lesions typical of the anaplasmosis-like condition in swine were observed. No bacterial growth was found on cultures of the tissues. Microscopic examination of blood films disclosed the presence of many anaplasmosis-like bodies in the red cells.

On July 23, 2 sick pigs, weighing approximately 80 lb. each, were delivered to the Kansas State College Veterinary Research Laboratory. One pig died enroute, and a postmortem examination revealed typical ictero-anemia lesions. Examination of stained films from the 2 pigs disclosed a microörganism very similar in appearance to *E. wenyoni* and *E. ovis*. Table 2 indicates the degree of parasitic infection as pig 1 recovered. Blood films were obtained from 4 additional pigs from this herd, 2

TABLE 1— The Course of Eperythrozoon Infection in Clinical and Subclinical Cases of Ictero-anemia

	Date (1949)	Temp. (F.)	Days since initial symptoms	Degree of infection	Blood picture
HERD A					
Pig 1	7-23	106.0	2	Numerous	Frequent regen. changes
	7-25	103.8	4	Frequent	Marked regen. changes
	7-29	103.0	8	Scarce	Few regen. changes
Pig 2	7-22	106.2	4	Scarce	Marked regen. changes
	7-24	105.0	6	Negative	Marked regen. changes
	8-1	103.0	13	Negative	Few regen. changes
Pig 3	7-24	105.5	Apparently normal	Scarce	Marked regen. changes
	8- 1	103.5	Apparently normal	Rare	Few regen. changes
Pig 4	7-24	107.0	Apparently normal	Numerous	Normal
	8- 1	103.6	Apparently normal	Rare	Marked regen. changes
Pig 5	7-24	106.7	1	Very numerous	Normal
	7-26		Dead	(Ictero-anemia lesions present)	
HERD B					
Pig 6	8-19	107.2	1	Very numerous	Normal
	8-23	107.0	5	Occasional	Marked regen. changes
Pig 7	8-19	106.0	1	Numerous	Normal
	8-23	104.5	5	Rare	Marked regen. changes
Pig 11	8-19	104.5	Apparently normal	Rare	Frequent regen. changes
Pig 12	8-19	103.5	Apparently normal	Occasional	Normal
HERD C					
Pig 8	8-4	105.0	Apparently normal	Numerous	Normal
	8-10	104.6	Apparently normal	Scarce	Marked regen. changes
Pig 9	8-4	103.8	Apparently normal	Frequent	Normal
	8-10	103.7	Apparently normal	Scarce	Few regen. changes
Pig 10	8-2	103.1	5	Rare	Marked regen. changes
	8-8	102.9	11	Rare	Marked regen. changes

of which were visibly affected and 2 apparently normal. Subclinical anemia developed in both normal pigs, and Eperythrozoon organisms were observed in all. The results of these blood examinations are given in table 1.

To determine the presence or absence of hog cholera virus, and to attempt transmission of Eperythrozoon, 4 cc. of citrated blood from pig 1 was injected intravenously into 2 cholera-susceptible pigs. One pig was given 30 cc. of hog cholera antiserum subcutaneously. Both pigs were still normal after forty-five days. Eperythrozoon organisms appeared in both animals, the resulting parasitic infection being very mild with no clinical symptoms evident. The susceptibility of these pigs to Eperythrozoon was not proved prior to inoculation. It is, therefore, unknown whether the animals were in a state of premunition, or the infection observed was a recrudescence of a latent infection or an actual transmission. Blood films from both animals were negative prior to inoculation. Eperythrozoon organisms were present in both after twenty-four hours. A third pig, not inoculated, showed eperythrozoa twenty-four hours after being confined in a pen with pig 1. A blood examination was not obtained prior to placing this animal in contact with the sick pig. It is assumed the animal was already harboring eperythrozoa.

Herd B.—This herd, located near Shenandoah, Iowa, consisted of 124 pigs in addition to the sows and a boar. The pigs were vaccinated for cholera by the simultaneous method on May 7, 1949. On August 19, a postmortem examination was made on a pig that had been sick about one week. Typical ictero-anemia lesions were observed. Blood films were not obtained from this animal. Films were, however, obtained from 2 additional pigs showing early symptoms, and 5 apparently normal pigs selected at random. Eperythrozoa, identical in morphology to those observed in herd A, were found in blood films from both animals showing symptoms, and in 2 apparently normal pigs. As indicated in table 1, an increased temperature and a subclinical anemia were present in 1 of the apparently normal pigs harboring eperythrozoa.

Herd C.—This group of swine at Manhattan, Kan., consisted of 17 pigs, weighing approximately 125 lb., and 2 brood sows. The pigs had not been immunized against hog cholera. Examination of a sick pig (pig 10, tables 1 and 2) from this herd was made after the animal had been noticeably ill for five days. Symptoms and data obtained on blood examination were typical of the anaplasmosis-like disease; icteric discoloration of the mucous membranes was not evident, however. Eperythrozoa were observed in films from this animal. Table 2 indicates the progress of recovery. A mild relapse developed in this pig, as indicated in the data, by recrudescence of the parasitic infection, followed by an increased body temperature and marked lowering of the erythrocytic count and hemoglobin values.

Examination of the remaining 16 pigs in the herd disclosed Eperythrozoon organisms in the following degrees of infection: 3 pigs were negative for parasites; in 6 pigs, the parasites were rare; in 4, the parasites were scarce; and in 1 pig each, the organisms were occasional, frequent, and numerous. As previously stated, blood studies were made on the 2 latter animals. A third pig, in which the parasites were scarce, was used as a control. Data obtained from pig 8, in which the parasites were most numerous, are included in table 2. The blood count in this pig dropped from 9,390,000 per cubic millimeter to 6,820,000, the hemoglobin dropping from 15.1 to 12.2 Gm./100 cc. of blood. Blood values returned to nearly normal following the disappearance of the parasite. The erythrocyte count in the second pig dropped from 8,410,000 per cubic millimeter to 6,130,000, and the hemoglobin from 14.9 to 12.2 Gm./100 cc. of blood. Blood counts in the control pig dropped from 8,490,000 to a low 8,060,000 per cubic millimeter; hemoglobin values dropped from 14.8 to a low of 14.3 Gm./100 cc. of blood. Increased regenerative blood changes were evident in the 2 former pigs, being most marked in pig 8 which showed the heaviest infection of eperythrozoa. The blood picture remained unchanged in the control. The temperature of pig 8 ranged from an initial high of 105.0 F. to 103.1 F.; that of the second pig from 103.8 to 102.6 F.; while that of the control pig, initially at 102.4, varied a maximum of only 0.4 of a degree during the entire course of examination. Temperatures of several other pigs selected each time at random remained between 102.0 and 103.5 F.

The number of animals studied in this herd was insufficient for obtaining conclusive evidence of the pathogenicity of Eperythrozoon. It is, however, significant that increased body temperatures were found associated with the heaviest parasitic infections, and that blood destruction and lowering of the temperatures occurred during the period when eperythrozoa

disappeared from the peripheral blood. Examination of the tabulated data indicates that this is apparently a characteristic course of the disease, regardless of the severity. Neitz,[6] Jensen,[7] and Splitter[10] have reported this to be characteristic of the course of infection in acute eperythrozoönosis of cattle and sheep.

Robb [12] has reported ring-shaped structures in films from ictero-anemic pigs and reported finding these same structures in an almost equal number of apparently normal pigs. He concluded that these structures were actually artifacts produced in the process of spreading, staining, or drying. In order to determine the number of apparently normal pigs harboring Eperythrozoon in demonstrable numbers, blood films were obtained at a local livestock sales pavilion from 25 apparently normal swine representing 6 herds. These pigs ranged in size from 20 to 180 lb. No Eperythrozoon was observed in any of the films. The number of latent carriers was, of course, not determined by this method.

DISCUSSION

The finding of Eperythrozoon associated with an acute anemic and icteric condition immediately suggested this organism to be the etiologic agent of the so-called ictero-anemia or anaplasmosis-like disease of swine. Because of the apparent wide variance in pathogenicity, as indicated in the data obtained, conclusive evidence of etiology awaits the experimental reproduction of the disease. In experimental eperythrozoönosis of cattle and sheep, Neitz and coworkers,[4] Jensen,[7] and Splitter[10] have noted a direct correlation between the degree of parasitism and the severity of symptoms. Severe parasitic infections may be followed by the appearance of symptoms and excessive blood destruction. Mild infections of Eperythrozoon result in little or no erythrocytic destruction, and no clinical symptoms.

The clinical and laboratory data presented were the result of efforts to observe the relationship of the Eperythrozoon infection to the course of the anaplasmosis-like disease. In correlating the parasitic infection with the course of the disease, the observation by Neitz and coworkers[4] concerning the course of eperythrozoönosis of sheep is of particular significance. They report that the active multiplication of Eperythrozoon organisms continues up to the time when the first signs of anemia appear in films. Then the number suddenly decreases so that when the anemia is most marked, comparatively few or no organisms may be seen. Splitter[10] has corroborated this observation in cattle.

All cases of eperythrozoönosis observed in these studies (tables 1 and 2) appear to have followed this particular course. Data obtained on pigs 1, 4, 6, 7, 8, and 9, which apparently were observed at or near the peak of parasitic infection, illustrate the course of eperythrozoönosis as described. A rapid decrease in the number of parasites is correlated with the development of an anemic blood picture, the parasites being few or absent during marked anemic changes in the blood. It would appear from these data that the blood destruction and corresponding regenerative changes are due directly to the effects of the parasites observed in these cases.

TABLE 2—Blood Values Observed During Clinical and Subclinical Eperythrozoonosis

Date (1949)	Temp. (F.)	*r.b.c.	**Hemoglobin	Degree of infection	Anemic changes in blood film
PIG 1					
7-23	106.0	2,110,000	3.9	Numerous	Frequent
7-25	103.8	3,620,000	7.2	Frequent	Marked
7-27	103.0	6,080,000	10.1	Scarce	Frequent
7-30	102.7	5,160,000	12.8	Scarce	Normal
8- 4	102.2	7,320,000	13.5	Negative	Normal
PIG 8					
8-4	105.0	9,390,000	15.1	Numerous	Normal
8-6	103.5	9,070,000	13.8	Numerous	Normal
8-8	103.3	7,527,000	12.2	Frequent	Frequent
8-10	104.6	6,820,000	12.5	Scarce	Numerous
8-12	103.4	7,390,000	13.6	Negative	Numerous
8-15	103.1	8,980,000	14.6	Negative	Nearly norm.
PIG 10					
8-2	103.1	2,220,000	2.6	Rare	Numerous
8-3	102.5	3,120,000	4.9	Occasional	Numerous
8-4	103.0	3,730,000	7.7	Frequent	Numerous
8-5	105.7	2,310,000	4.7	Occasional	Numerous
8-6	102.7	3,700,000	7.2	Rare	Numerous
8-10	103.0	4,480,000	12.2	Negative	Frequent
8-15	102.4	7,980,000	13.1	Negative	Nearly norm.

*Erythrocytes per cubic millimeter.
**Expressed in grams per 100 cc. of blood.

From observations made on these three outbreaks of eperythrozoönosis, it is evident that the majority, or perhaps all, swine in an infected herd may undergo subclinical infection, with anemia varying from none to moderate depending, apparently, upon the intensity of the parasitic infection. It is apparent that the organism spreads rapidly through the herd. If any similarity exists in the distribution of eperythrozoönosis of sheep and cattle and of eperythrozoönosis of swine, it will be found to be a widespread and common blood parasite. Acute eperythrozoönosis will be recognized in those animals in which, for reasons unknown, the parasites increase in numbers to pathologic proportions.

Investigations are being continued to reproduce acute eperythrozoönosis in swine

under experimental conditions. Cross inoculation studies are in progress to determine if eperythrozoönosis in swine is due to a species other than *E. wenyoni* or *E. ovis*. The results of these studies will be reported in an additional paper.

SUMMARY

1) A blood parasite similar in appearance to *Eperythrozoon wenyoni* and *Eperythrozoon ovis* has been found associated with the clinical entity of swine known as "ictero-anemia" or "anaplasmosis-like" disease. The organism has been observed in three separate outbreaks.

2) Subclinical cases of anemia were observed in these herds. Eperythrozoon also were found to be associated with these mild cases.

3) A characteristic course of parasitic infection has been observed in clinical and subclinical cases. This consists of the rapid disappearance of the parasites associated with increasing regenerative blood changes. Body temperatures are elevated early in the disease, when the parasites are most numerous, and decrease as the parasites disappear. This course is identical to that of experimental eperythrozoönosis in cattle and sheep.

4) Eperythrozoönosis of swine is probably a common condition, being recognized clinically only in those individuals that develop acute anemia and icterus following heavy parasitic infections.

5) Efforts are being continued to reproduce the disease experimentally, and to determine the relationship of this species to that of cattle and sheep.

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General Johnson Speaks on Foot-and-Mouth Disease in Mexico

"This [the Mexican foot-and-mouth disease campaign] is a scientific program, a program of veterinary medicine. The dedication of the veterinarians from the United States and Mexico have made the gains possible," said General Harry H. Johnson, co-director of the Mexico-United States Commission for the Eradication of Foot-and-Mouth Disease, while speaking to the members and guests of the Joint-Livestock Committee in Chicago on March 23, 1950.

General Johnson described the achievements that have been made by the Commission relative to the production of vaccine, its administration, and the speed with which the inspection and clean-up teams report and operate.

Areas that have been covered four times by the vaccination teams are now being maintained under constant inspection, but the animals are not being vaccinated again. The young animals born in these areas will serve as test animals to determine whether the virus is still present. If outbreaks occur in these areas, it is hoped that by rapid reporting of inspectors, instantaneous eradication of infected and exposed animals, and thorough disinfection that the disease can be completely eradicated. As an example, General Johnson told how the outbreak of type O virus had been successfully handled by these methods. Rapid eradication of the infected and exposed animals, followed by thorough disinfection of the premises, completely eliminated the type O virus as evidenced by the failure of test animals to become infected on the same premises.

As little as 10 per cent of unextracted soybeans in hog feed may cause undesirable soft fat.—*Hoard's Dairyman, Jan.* 10, 1950.

Taenia Saginata in Man and Cattle in Arizona

OSCAR SUSSMAN, D.V.M., M.P.H., and C. J. PRCHAL, D.V.M.

Phoenix, Arizona

THE PROBLEM of cyst-infected beef carcasses in Arizona mounted in 1946 to a stage of importance to ranchers, packers, and inspection authorities. A report by George W. Marx[1] brought this to the attention of persons concerned and the following investigation was begun at their request.

Federal meat-inspection records (table 1) reveal that, in 1947, when cattle were fattened in feedlots in the Salt River Valley, the rate of infection ran as high as 3 per cent of all such cattle slaughtered. No cattle slaughtered direct from the range were ever found to have cysts in their musculature. Within one individual feedlot-fattened herd, infection ran as high as 12 per cent of the carcasses examined (table 1).

TABLE 1—Rate of Infection with Taenia Saginata of Cattle Fattened in the Salt River Valley from July 1946 to February 1949

Date	All feedlot-fattened cattle slaughtered (%)	Range cattle not feedlot fattened (%)	Cattle from ranch selected for control (%)
July 1946 to June 1947	3.0	0	over 12.0
July 1947 to June 1948	2.0	0	over 10.0
July 1948 to Feb. 1949	less than 0.5	0	less than 0.5

This investigation was commenced in October, 1947, and sanitary control procedures were put into practical effect by January, 1948. The decision was made to concentrate on one of the highly infested ranches in an attempt to find the cause and to establish the control methods needed to limit the spread. All animals slaughtered from this ranch were checked throughout the investigation.

Through the coöperation of the ranch operator, a complete survey of fecal samples was made of all ranch hands who might pass fecal excrement onto the fields on which cattle later grazed. A sanitary survey of the sewerage system revealed no gross defects. However, defects were noted in the manner in which workers picking vegetables in these fields disposed of the fecal excreta. The ranch operation consisted of growing truck vegetable crops for shipment to northeastern markets and the later use of these fields as feedlots for grazing cattle at times when crops were not being raised. As many as 250 workers—men, women, and children, of Mexican, Indian, and native white stock—worked in a field. This, at times, placed them from ½ to 1½ mi. from the nearest permanent toilet facilities. Many times, therefore, the irrigation ditches served as a natural wash for fecal excreta, and at times planks and crude sheds were observed straddling such waterways. This was called to the attention of the management as poor practice and arrangements were made for temporary deep pits to be dug each day as the workers changed location.

The survey of fecal samples was conducted at the Arizona State Department of Health laboratory. Pint-sized ice cream containers were passed out each day by the gang foreman to 25 or 30 workers who were not rehired the next day unless they returned the container with the fecal sample as requested. In the case of some of the Indians, superstition and a voodoo complex were difficult to overcome. At one time, powwows were held for four nights before complete coöperation was obtained. The identified samples were taken each day to the laboratory where simple saline-flotation suspensions were made and the floated material examined for Taenia ova. This method was used as a screening device to locate any tapeworm infection. When ova were observed, the infected person was sent to a physician designated by the ranch to determine if the Taenia were of the species *saginata*.

Of 272 samples examined and later reëx-

Senior assistant veterinarian (Sussman) on loan to the Arizona State Department of Health from the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Ga.; since March 1, 1949, senior public health veterinarian, New Jersey Department of Health, Trenton.

Inspector in charge, Meat Inspection Division, U. S. Bureau of Animal Industry, Phoenix, Ariz. (Prchal).

The authors are indebted to Miss Marian E. Stroud, senior bacteriologist, Arizona State Department of Health, for her help in the fecal sample work; to Dr. James P. Ward, state director of health for Arizona, for his guidance and assistance; to Mr. E. F. Barrie, chief engineer of sewerage, Melbourne, Australia, for his personal notes; and to Mr. George E. Marx for his assistance and coöperation in all phases of the sanitary engineering details.

amined, 4 were positive for *Taenia saginata*, as later confirmed by proglottid examination after the patients were treated by a physician. Of particular interest is the fact that 2 of the men infected were irrigation foremen. These men were on duty night and day, opening and closing valves of the irrigation system. They were away from available toilet facilities and natural functions were carried on, at times, out in the fields and in the irrigation ditches.

Upon the initiation of this investigation, other ranchers in the vicinity were also given advice as to the proper methods of the sanitary disposal of human excreta. In some ranches, it was found that workers would defecate in the silage pits on feed later fed to cattle in the feedlots. Suggestions were made to have such key employees checked annually and to provide for greater availability of toilets. Arrangements were made for heavily infected herds to be examined more thoroughly when they were slaughtered.

DISCUSSION

The encysted form of the beef tapeworm, *T. saginata*, was increasing in prevalence in Arizona cattle slaughtered after fattening in feedlots of the Salt River Valley area in 1946 to 1947. A controlled survey experiment to attempt to limit the infection by proper sanitation has been successful to this date. The sampling of feces of all agricultural employees working on fields where cattle run proved to be advantageous in limiting the spread of *Cysticercus bovis*. The length of time the cattle are fed in feedlots may be a definite factor in the observance of viable cysts. As Schwartz[2] has stated, the size of the Cysticercus varied from 4.0 mm. (0.15 in.), at four weeks after ingestion of ova, to 7.9 mm. (0.31 in.) at twenty-eight weeks. In the ranch observed, however, this time-in-feedlots factor did not enter, as all procedures were kept constant, except (1) the fecal sampling, (2) the removal of mature Taenia from infected human beings when found, and (3) the introduction of improved sanitary facilities.

CONCLUSION

From the above field observations, it is concluded that the problem of *Cysticercus bovis* infection can be controlled in the Salt River Valley in Arizona by:

1) Annual examinations of fecal samples of ranch workers to determine carriers of the adult *Taenia saginata*. This should be done at state expense, as it is a definite public health hazard to allow meat-producing animals to have access to ova and thus become infected.
2) Educating ranchers to the necessity for providing convenient sanitary facilities for their workers at all times.
3) Giving ranch workers a proper concept of how cattle become infected by means of human fecal contamination of the animal's food and water.

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Diseases of Household Animals Transmitted to Man

Of the many infectious diseases transmitted to man by animals, it is remarkable how few of them originate in household pets. In view of man's close and continuous association with household pets since remotest antiquity, the danger to which the family exposes itself in harboring and fondling them is meager.

Tuberculosis of dogs tends to isolate itself in the glands after the initial invasion; *brucellosis*, whether common or not, is recognized only by detecting the presence of antibodies; skin parasites in dogs and cats are strikingly species-specific; *leptospirosis* of dogs, or canicola fever, is due to a different species of Leptospira than that which commonly infects the human being; *salmonellosis*, a somewhat rare infection of dogs and cats, has not been found to be a reservoir for Salmonella spp., as a rule; *streptococcosis* is too rare in dogs to be spoken of as a transmissible infection from dog to man; the *tapeworms*, *Taenia echinococcus*, the causative agent of hydatid cysts in man, is not often mentioned in current medical literature; *toxoplasmosis* which affects man as well as dogs requires further study as to its danger to the family circle; *ornithosis* of psittacine birds has to be reckoned with but is a rare threat to owners, fanciers, and to public health in their captive state.

All-in-all, one may hazard the opinion that the parasitic agents harbored by the animals of the household are not as much danger to mankind as phobists wish to believe. Otherwise told, no tragic epidemic has ever been traced to household animals.

The Giant Kidney Worm (Dioctophyma Renale) in Mink in Maine

With a Summary of Recent North American Records

M. C. MEYER, Ph.D., and J. F. WITTER, D.V.M.

Orono, Maine

IN THE PAST, there have appeared numerous reports of the giant kidney worm, *Dioctophyma* renale* (Goeze, 1782), in the United States and Canada. Riley[12] and Hall[7] reviewed the earlier reports and Underwood and Wright,[14] in 1934, summarized the North American records, which comprised well over 50 authentic cases. In Canada to date, the parasite has been recorded from the provinces of Manitoba, Ontario, and Quebec; and in the United States, from the District of Columbia and 13 states—Arkansas, Illinois, Iowa, Maryland, Michigan, Minnesota, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia, and Wisconsin. It has been recovered from the abdominal cavity, mammary gland, and/or kidney(s) of the coyote (*Canis latrans*), dog (*Canis familiaris*), mink (*Mustela vison*), red fox and related forms (*Vulpes fulva*), timber wolf (*Canis lupus*), and wolverine (*Gulo luscus*).

Dioctophyma renale, among the largest of nematodes (females the larger, attaining a length of about 1 m., and a thickness of more than 1 cm.) is a very destructive helminth, although an infected animal may show no external symptoms. An infected kidney undergoes great pathologic changes and may be enlarged to 4 times its normal size. The major and minor calyces of the kidney may be largely destroyed, with only the capsule remaining, and the pelvic mucosa undergoes extreme papilliferous metaplasia. The uninfected kidney undergoes considerable hypertrophy, increasing to 1½ times its normal size, to compensate for the dysfunction of the infected one.

Almost invariably, in the case of kidney infection, it is the right organ that is involved. McNeil,[8] who found only 1 case in the left in a total of 34 infections, concluded that the right kidney is the normal habitat of the worm.

If the female worm occurs in a kidney, diagnosis can be made by finding the eggs in the urine. The ova are ellipsoidal, brownish yellow, and have a thick, pitted shell, except at the two poles. They measure 71 to 84 by 46 to 52 μ.

Although it had been long suspected that the definitive host acquired the worm as a result of eating infected fish, it remained for Woodhead[15,16] to work out the complete life cycle. He found that branchiobdellids (Oligochaeta), which commonly live on crayfish, serve as the first intermediate host. The mammalian host acquires the infection through eating the infected bullhead (*Ameiurus melas*); while the bullheads become infected coincident with eating the branchiobdellid-laden exuviae of crayfish or the temporarily free-living Oligochaetea. Two years are required to complete the life-cycle from egg to adult.

During November, 1949, we received a single, relatively small (16.5 cm.) female specimen, recovered from the kidney of a ranch-raised mink at Whitney, Maine. According to the donor, Mr. Francis A. Greene, the host became ill the previous March and, apparently, died from the worm some eight months later. A second case of its occurrence, resulting in death of mink, from the same locality was later reported, but we failed to receive the evidence or other pertinent information. According to the information reaching us, the mink had been fed on frostfish and pollock.* Earlier, a specimen was obtained by one of us (M.C.M.) from the kidney of a dog, which supposedly died from the infection, at Lexington, Ky. Although known from nearby areas, these reports constitute the first record of its occurrence in Maine and Kentucky.

The several, widely scattered North American records of its occurrence, which have appeared since the summarization of Underwood and Wright, have been assembled for ready reference.

In 1936, Patterson[10] reported removing a female specimen, measuring 75 cm., from the mammary gland of a dog which came from the Pacific Coast. Neither the exact

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*This spelling of the generic name is that approved and recommended by the Committee on Nomenclature of the American Society of Parasitologists (J. Parasitol., 27, (1941):279-282).

*Colloquial names, fish not presented for identification.

source nor how long the host animal had been in Michigan is given.

The next year (1937), Graves[6] recorded two specimens, a female measuring 44.5 cm. and a male, 48 cm. long, from the right kidney of a 1-year-old mink in Wisconsin. The animal was pen bred, whelped, and raised, and had never been off the ranch. Earlier, the same veterinarian found a mink also infected with 2 worms.

Woodhead and McNeil,[17] in 1939, reported finding 8.6 per cent infection in the mink examined during the 1938-1939 season from southern Michigan.

Dunne,[3] in 1940, reported 2 specimens in a dog, originally from Minnesota, in Iowa. A male worm, 32 cm. long, was free in the abdominal cavity and a female, measuring 82 cm., was found coiled in the right kidney of which only the capsule remained. From North Carolina, Brown *et al.*[1] reported finding 20 cases among a total of 54 dogs autopsied. This represents an infection rate of 37 per cent, the highest known incidence to appear in the literature. In 13 hosts, worms were found in the body cavity only; in 6 they were present in the kidney as well as in the body cavity; and 1 animal had worms in the right kidney only. In no instance was the left kidney involved. In the same year (1940), Cameron *et al.*[2] reported a case in a dog from Berens, Manitoba. In this instance, which is somewhat unusual, both kidneys were infected. The female worms measured 76 cm.

Sealander[13] (1943), in connection with a study of parasites of mink in southern Michigan during 1940-1941, found 4 cases among the 158 hosts autopsied.

In a study of the helminths of Minnesota Canidae, Erickson[4] (1944) reported an incidence of 5.5 per cent in the timber wolf (*Canis lupus*). Randall,[11] also in 1944, reported the recovery of 2 worms, 1 measuring 81 cm. and the other 56 cm., from the right kidney of a dog. The dog had been fed on fish and was received from Canada about three months prior to its death at an army camp in Colorado. Upon autopsy, the following pathologic conditions were apparent: general emaciation, chronic hemorrhagic enteritis, hypertrophy of the left kidney except for the capsule which was indurated and distended.

Morse,[9] in 1945, reported finding a worm, 58.5 cm. long, in the abdominal cavity of a dog in Virginia. Neither kidney revealed any evidence of recent or old site of exit for the worm from these organs.

Erickson[5] (1946), in connection with a broader study dealing with the worm parasites in Minnesota Mustelidae, found 5 of 72 ranch-raised mink infected.

This paper will supplement Underwood and Wright's summarization, providing a convenient reference to all known North American records of *Dioctophyma renale*. Although this résumé of its occurrence in North America appears complete from 1934 to date, there have doubtless been numerous unrecorded cases.

SUMMARY

The presence of *Dioctophyma renale* from the kidney of Maine mink and from a Kentucky dog are reported. The foci of infection, pathology, and description of ova are included. Records of its occurrence in the United States and Canada since 1934 have been summarized and assembled for ready reference.

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Action of Methyl Benzene (Toluene) Against Horse Bots

During a series of critical tests with methyl benzene (toluene) as an ascaricidal agent in horses, an apparent selective action was noted against the two species of bots commonly occurring in Kentucky. The two species ordinarily are found in distinct regions of the stomach, *Gasterophilus intestinalis* occurring in the area of the lesser curvature in the esophageal region near the cardia while *Gasterophilus nasalis* is found in the pyloric region near the pylorus. At postmortem of the first 11 horses in the series, it was noted that a high percentage of *G. intestinalis* had been expelled from the stomach in the 24-hour period following administration of methyl benzene by stomach tube at the rate of 0.1 ml. per pound of body weight. Numbers of *G. nasalis*, on the other hand, were present and attached in the pyloric region of the stomach, although specimens found in the large intestine indicated that some action against *G. nasalis* had occurred. Results of two further critical tests have been recorded in detail.

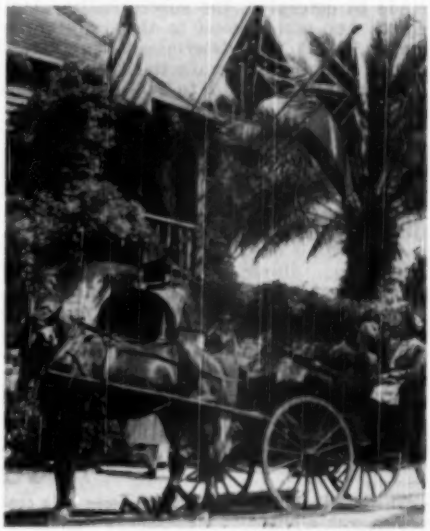
In the first test, 109 ml. methyl benzene were administered to a 1,085-lb. Thoroughbred mare (0.1 ml./lb. of body wt.) which was on full feed. At postmortem twenty-four hours later, 19 specimens of *G. nasalis* were found alive and attached in the pyloric region of the stomach. Three live *G. intestinalis* were found attached in the esophageal region. A few specimens of *G. nasalis* were recovered from the contents of the large intestine, and 53 dead specimens of *G. intestinalis* from the contents of the large intestine. In the second test, 210 ml. of methyl benzene were administered to a 1,050-lb. Thoroughbred mare (0.2 ml./lb. of body wt.) on full feed. At postmortem twenty-four hours later, 35 live *G. nasalis* were recovered from the stomach, 6 live specimens from the small intestine where they were attached to the mucosa, and 30 live and 61 dead specimens in the contents of the large intestine. A total of 105 dead specimens of *G. intestinalis* were recovered from the large intestine.

These data indicate a selective action of methyl benzene against horse bots. The drug appears to be more efficient against *G. intestinalis* than it is against *G. nasalis*. Its ability to kill bots within twenty-four hours after contact, and in horses on full feed, indicates the desirability of further investigation.—*A. C. Todd, Ph.D., M. F. Hansen, Ph.D., M. F. Smith, D.V.M., and R. G. Brown, D.V.M., Department of Animal Pathology, Kentucky Agricultural Experiment Station, Lexington, Ky.*

The investigation reported in this paper is in connection with a project of the Kentucky Agricultural Experiment Station and is published by permission of the director.

Fifty per cent of the iodine, in this country, is derived from oil wells—a by-product of the petroleum industry.

AVMA Convention—Miami Beach, Aug. 21-24, 1950



—*Milton E. Bacon and Associates*

Antique horse-drawn taxis still bring visitors to the Oldest House in St. Augustine, Fla. Four flags symbolize the four governments under which this ancient house has stood — Spanish, British, Confederate, and the United States.

Treatment of Septicemic Infections of Foals

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OF THE microörganisms causing morbidity and mortality in young foals, *Shigella equuli* and streptococci are the most important. The clinical manifestations resulting from infection by these two organisms are referred to in veterinary literature as navel-ill, pyosepticemia, joint-ill, pyoarthritis, omphalophlebitis, and sleepers. Diseases of young foals in the breeding establishments of central Kentucky were recently described by Dimock, Edwards, and Bruner.[1] In their report of postmortem examination of 810 foals, varying in age from 1 day to 8 months, 31.5 per cent of deaths were due to *S. equuli* and 25.7 per cent were due to streptococci. The incidence of infection with *S. equuli* was greatest in the very young foals, while streptococcic infections were more prevalent in foals as they became older. Of 209 foals dying of *S. equuli* infection during the first month of life, 197 deaths occurred in the first week and, of these, 160 were in the first three days.

Following the introduction of penicillin and streptomycin, *in vitro* assays were made to determine the susceptibility of *S. equuli* and streptococci to these antibiotic agents.[2,3] It was determined that streptococci from equine infections were regularly inhibited by 0.02 to 0.03 unit of penicillin per cubic centimeter of medium; while for *S. equuli*, 2.0 to 4.0 or more units per cubic centimeter of medium were required. For streptomycin, *in vitro* inhibition of *S. equuli* was obtained with concentrations of 4.0 to 16.0 units per cubic centimeter of medium, while streptococci required 16.0 or more units for complete inhibition. Other investigations demonstrated that for *S. equuli* infections the required serum level of streptomycin was easily obtainable, and that an effective concentration of penicillin could not be obtained with any reasonable dosage.[4,5]

The present investigation was conducted in coöperation with practicing veterinarians, with emphasis on the use of streptomycin in foals appearing to have *S. equuli* infections. The general plan was to start treatment with streptomycin as soon as possible after illness was observed, using 0.5-Gm. doses intramuscularly at three-hour intervals. In some instances, the initial dose of streptomycin was 1 Gm. Penicillin, sulfonamides, and symptomatic or supportive treatment were used at the discretion of the veterinarian attending the case. In all instances, diagnosis was made on clinical examination only. Because accurate clinical differentiation of *S. equuli* and streptococcic infection can not be made, and also because of the frequent occurrence of concurrent infection, both streptomycin and penicillin were administered to most of the foals. In this report, cases will be presented to represent a composite of the infections observed in young foals on the Thoroughbred breeding farms of central Kentucky.

INFECTIONS IN YOUNG FOALS

Case 1.—Illness was first noticed at 2 days of age, with weakness, listlessness, congested membranes, rapid respirations, increased pulse rate, inflamed navel, distended abdomen, diarrhea, and temperature of 102.5 F. Treatment consisted of 0.5-Gm. doses of streptomycin intramuscularly at three-hour intervals for seventy-two hours, and procaine penicillin in oil, 1,000,000 units twice daily for three days. The foal showed improvement after twenty-four hours. It recovered rapidly during the ensuing forty-eight hours and developed normally. This foal may have been infected with either *S. equuli* or streptococci or both.

Case 2.—This foal was five days premature but was apparently normal at birth and stood and nursed normally. At 5 hours of age, it developed convulsions. Previous experience has shown that foals showing illness of this type usually die with *S. equuli* septicemia. Sedation was accomplished with equi-thesin.* Streptomycin, 1 Gm., was given intramuscularly and followed by 0.5-Gm. doses at three-hour intervals for three days. Penicillin in aqueous solution, 50,000 units, was given every two hours for twenty-eight hours, followed by 5 injections of 300,000 units of penicillin in oil and wax at twelve-hour intervals. The

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The streptomycin used in this study was supplied for experimental use through courtesy of Merck and Company, Inc., Rahway, N. J.

*Jensen-Salsbery Laboratories, Kansas City, Mo.

foal was fed its dam's milk by stomach tube at four-hour intervals through the second day, after which it began nursing the mare. At weaning time, the foal was developing normally.

Case 3.—This foal was born normally and was normal in conformation. In a few hours, it was very excitable, walking aimlessly and blindly about the stall, and having no nursing instinct. As with case 2, foals showing these symptoms nearly always terminate in *S. equuli* septicemia if left unattended. Antibiotic treatment consisted of an initial injection of 1 Gm. of streptomycin followed by 0.5-Gm. doses at three-hour intervals for sixty hours. An initial dose of 1,000,000 units of penicillin in oil and wax was given and was followed by 500,000-unit doses at 24-hour intervals for three days. The foal improved rapidly during the first forty-eight hours and recovered completely.

Case 4.—When first seen at 4 days of age, the foal was extremely weak, could not stand or nurse, and showed symptoms typical of *S. equuli* infection. It was given a 500-cc. transfusion of dam's blood daily for three days. Daily doses of 500,000 units of procaine penicillin in oil were administered for three days. The initial dose of 2 Gm. of streptomycin was followed by 1-Gm. doses at three-hour intervals for seventy-two hours. There was marked improvement forty-eight hours after initiation of treatment. The foal made a complete recovery.

Case 5.—This foal appeared normal at birth, but at 2 days of age it developed an illness with weakness, depression, erratic movements, refusal to nurse, congested membranes and temperature of 104 F. The clinical appearance was that of *S. equuli* septicemia. Antibiotic treatment consisted of 500,000 units of procaine penicillin in oil daily for three days, and 0.5-Gm. doses of streptomycin at three-hour intervals for seventy-two hours. There was marked improvement in condition of the foal during the first twenty-four hours, and it made a complete recovery.

Case 6.—The foal became ill during the first 24 hours of life, showing weakness, listlessness, refusal to nurse, and a temperature of 103.4 F. Appearing to be in the early stages of *S. equuli* infection, the foal was given 0.5-Gm. doses of streptomycin at three-hour intervals for thirty hours. The foal improved rapidly and has developed normally.

Case 7.—The foal was 6 days of age when first seen. Its temperature was 104.4 F., it had stopped nursing, was colicky, depressed, weak, and had congested mucous membranes. *S. equuli* infection was considered as the most likely cause of the illness. Doses of 0.5 Gm. of streptomycin were administered at three-hour intervals for five days. The foal's condition improved gradually throughout the treatment. Recovery was apparently complete and the foal has developed normally.

Case 8.—Apparently normal at birth, the foal had developed typical sleeper symptoms at 2 days of age. It received two doses of 500,000 units of procaine penicillin in oil at 24-hour intervals and ten doses of 0.5 Gm. of streptomycin at three-hour intervals. The foal recovered rapidly and completely and has grown normally through the suckling period.

Case 9.—This foal was very weak when born and never got up to nurse. At 12 hours of age, it was a typical sleeper, being limp and comatose. Treatment consisted of one transfusion of 500 cc. of blood, 1 Gm. of streptomycin, and 500,000 units of procaine penicillin in oil. It died four hours following the treatment and was not presented for postmortem examination.

Case 10.—When first observed at 4 days of age, the foal was a characteristic sleeper showing prostration, somnolence, and swollen joints. It received one transfusion of 500 cc. of blood, an initial dose of 2 Gm. of streptomycin and two 1-Gm. doses at three-hour intervals. The foal died soon after the third dose of streptomycin. Postmorten examination revealed septicemic lesions, abscesses in the liver and kidneys, and pyoarthritis typical of *S. equuli* infection. Cultures from the organs and joints remained sterile.

Case 11.—This foal was weak at birth and rapidly developed into a typical sleeper. It received four doses of 0.5 Gm. of streptomycin at three-hour intervals before death occurred. Autopsy revealed lesions characteristic of *S. equuli* septicemia, including abscesses in the liver and kidneys and pyoarthritis. Bacteriologic examination of the organs and joints was negative except for four poorly growing colonies of *S. equuli* from the spleen.

Case 12.—This foal was the living member of a twin pregnancy. Though moderately active at birth, it developed an illness during the first 24 hours with elevated temperature, inappetence, weakness, and prostration. It received daily transfusions of 500 cc. of blood for three days. The initial dose of streptomycin was 1 Gm. followed by 0.5-Gm. doses at three-hour intervals for ninety-six hours. On the third and fourth days, 500,000 units of procaine penicillin in oil were administered. The foal recovered gradually and has been de-

veloping satisfactorily since treatment was terminated.

In addition to the cases listed, there was a group of 30 foals which exhibited indefinite illness during the first 24 to 48 hours of age and received 0.5-Gm. doses of streptomycin at three-hour intervals for twelve to twenty-four hours. Included in this group were foals that were born weak, those generally lacking in the energy and activity usually observed in newborn foals, those that were slow to stand and nurse, those failing to stand and nurse during the first three to eight hours following parturition, and those that became weak, depressed, and inactive a short time after birth. It is estimated by practicing veterinarians in the central Kentucky area that approximately 30 per cent of such foals will develop fatal infections from *S. equuli* if left unattended without measures to ward off infection. In this group of 30 foals which received only streptomycin as a prophylactic measure because of poorly defined early debility, all recovered and developed normally.

In addition to those mentioned in the case reports, 3 foals, diagnosed bacteriologically on autopsy as having *S. equuli* infection, had received treatment with streptomycin. Of these, 1 was born one month premature, lived twenty-four hours, and had 1 dose of streptomycin a short time before death. The second foal had been receiving 0.5-Gm. doses of streptomycin for twelve hours before death, and postmortem examinations disclosed a generalized septicemia with a severely infected navel, ruptured bladder, peritonitis, and arthritis. The third foal died at 48 hours of age, two hours after receiving a single 1-Gm. dose of streptomycin and 500 cc. of blood. It showed generalized septicemic lesions. Two other foals died following two- to three-day courses of streptomycin therapy which was instituted at the onset of a febrile illness. Autopsy revealed open ductus arteriosus and streptococcic pneumonia in both foals. Eleven foals dying under 72 hours of age and diagnosed bacteriologically as having *S. equuli* septicemia received no antibiotic treatment.

Review of Case Histories

In reviewing the case histories, case 1 was of such nature that either *S. equuli* or streptococcic or a mixed infection may have been involved. Cases 2 through 8, inclusive, were characteristic of diseased foals which yield *S. equuli* cultures when the illness terminates in death of the foal. Case 9, which terminated fatally, was characteristic of *S. equuli* infection. Case 10, which showed diagnostic postmortem lesions, was negative to cultural examination. It would appear that antibiotic sterilization of the tissues had occurred before the cultures were made. Since abundant growth of *S. equuli* is nearly always obtained from tissues of typically infected foals, it seems likely that antibiotic sterilization of the tissues was almost completed with case 11.

The effect of antibiotic therapy on the causes of mortality in young foals is apparent in the postmortem records maintained in the Department of Animal Pathology. From 1921 to 1945, examination was made on 810 foals, with diagnosis of *S. equuli* infection in 31.5 per cent and streptococci in 25.6 per cent. During a four-year period, 1944 through 1947, immediately preceding the use of streptomycin and penicillin, 256 foals were examined postmortem. In this group, death was assigned to infection with *S. equuli* in 24.6 per cent and streptococci in 19.9 per cent. The reduction in mortality from these two infections during this period is undoubtedly due, in part, to the use of sulfonamides; but in a very large measure, it has resulted from widespread and meticulous practice of breeding hygiene developed through the research of Dr. W. W. Dimock.

In the foaling seasons of 1948 and 1949, streptomycin and penicillin were widely used for infections of young foals. During this two-year period, 165 dead foals were examined and the mortality from *S. equuli* and streptococci was 15.1 per cent and 17.5 per cent, respectively. Since no changes were made by the local veterinarians in management of sick foals, except the substitution of antibiotic agents for sulfonamides, it appears reasonable to attribute the reduction in mortality during the last two years to the effect of streptomycin and penicillin. The percentage of bacteriologically negative foals and deaths from other causes increased during this period. The increase in percentage of bacteriologically negative foals appears to be due in part to antibiotic sterilization of the tissues.

Summary

Observations on the effect of antibiotic therapy for infections of newborn foals indicate that streptomycin is an effective agent for treatment of *Shigella equuli* infection.

Streptomycin alone, or in combination with penicillin, appears to have considerable merit as a prophylactic measure for preventing development of infection in congenitally weak foals.

Best results are obtained when treatment is begun early in the course of the infection and continued for twenty-four

to forty-eight hours after the temperature drops to normal range and the foal is nursing normally.

In newborn foals, an initial dose of 1 Gm. of streptomycin followed by 0.5-Gm. doses at three-hour intervals appears adequate for control of *S. equuli* infections.

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[4]Doll, E. R., and Wallace, M. E.: The Serum Level Response of Horses to Aqueous Solutions of Penicillin. Vet. Med., *44*, (1949):70-72.

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Scientists of the Bureau of Dairy Industry, USDA, studied the relationship between the thyroid and mammary glands by giving thyroxine to cows. They observed that the lower milk production of southern cows seems to be due to the smallness of their thyroids as compared with those of northern cows.

Tularemia and Domestic Animals.—The following information is quoted from a letter from Dr. Kenneth McEntee, Department of Pathology and Bacteriology, New York State Veterinary College, Cornell University, Ithaca:

> The January, 1950, issue of the JOURNAL, page 40, states: "Strangely, domestic animals are exempt; even the domestic rabbit doesn't contract 'rabbit fever.'"
>
> On page 354 (3rd ed.) of "Diseases Transmitted from Animals to Man," Thomas G. Hull states: "Natural infection in several of the domestic animals has been found, including the sheep, hog, cat, and dog, but these animals are not very susceptible." He also states that tularemia in human beings has occurred following contact with the cat, dog, sheep, and pig.
>
> Parker and Dade published an article, "Tularemia: Its Transmission to Sheep by the Wood Tick, *Dermacentor Andersoni* Stiles" (*J.A.V.M.A.*, 75, (1929):173).
>
> A report of tularemia in a man and 3 dogs, due to exposure to an infected rabbit, is described by Ey and Daniels, in *J. Am. M.A.*, *117*, (1943):2071.
>
> These are a few of the references to tularemia in domestic animals.

Cold Water Applications for Lymphangitis

Cold water applications for lymphangitis and similar disorders are less trouble when a gadget like the one pictured is used. It is a plastic hose, about 14 in. in diameter, with holes on the inner circumference about 1 in. apart. It is rigged so that it can be suspended from the horse's back. The water is supplied through a garden hose that attaches to the plastic ring. Dr. A. R. Skewes (ISC '49) is credited with introducing the use of plastic rings, instead of metal or rubber as formerly used.

—Photo by Dr. A. F. Brewer, Jr., in The Blood Horse

A plastic hose with small holes on the inner circumference, affording a spray of cold water applications. The hose may be attached to any hydrant.

Smooth Muscle Spasm and Antispasmodic Drugs in Small Animal Practice

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SMOOTH muscle spasm and antispasmodic drugs should be of major interest to every veterinarian who treats small animals. Unstriated muscle fibers are the chief muscular components of the structures which comprise the gastrointestinal and genito-urinary tracts; and the dynamic states of these muscles are basic factors in the functional activity of the stomach, intestines, gall bladder, ureters, bladder, urethra, and, at times, the uterus. Furthermore, a significant percentage of small animal patients present symptoms wholly or partly attributable to hypertonicity or spasm of smooth muscle of the digestive or urinary organs.

Smooth muscle activity in the gastro-intestinal and genito-urinary tracts goes on twenty-four hours a day. In toto, this is of all degrees, from atonic through hypotonic, tonic, and hypertonic to spastic. In the physiologically normal (healthy) animal, smooth muscle activity in, and the resultant functional state of, the digestive and urinary organs at a given time is to a significant degree determined by regulatory nervous impulses reaching the muscle fibers over sympathetic (adrenergic) and parasympathetic (cholinergic) pathways of the autonomic nervous system. In a broad sense, sympathetic influences are the opposite of corresponding parasympathetic influences, as is illustrated in table 1.

As table 1 indicates, theoretically, corresponding sympathetic and parasympathetic stimulatory influences of equal intensity could cancel each other, leaving the innervated organ in an indifferent state. Sympathetic stimulation or parasympathetic depression, or a combination of the two, would tend to render the organ less active. Conversely, sympathetic depression or parasympathetic stimulation, or both forces acting simultaneously, would tend to render the organ more active.

In the physiologically normal (healthy) subject, optimum functional activity of the gastrointestinal and genito-urinary tracts prevails because sympathetic-parasympathetic dominance varies in conformity with the changing needs of the body for digestive and excretory activity. But in the physiologically abnormal, morbid functional states of the gastrointestinal and genito-urinary tracts, sympathetic-parasympathetic inbalance, often exists. If the sympathetic is unduly depressed and/or the parasympathetic is over-stimulated by agencies either intrinsic or extrinsic to the organ, smooth muscle becomes hypertonic or spastic. Or if the sympathetic is over-stimulated and/or the parasympathetic unduly depressed, smooth muscle becomes hypotonic or atonic. However, discussion of the neurotropic aspect of smooth muscle activity should not be overshadowed by the musculotropic factors which are often definitely operative in production of smooth muscle spasm. In fact, such spasticity can be caused either by nervous or by direct influences, or by dual neurotropic and musculotropic forces.

The clinician recognizes an incidence of smooth muscle spasm in diseases of the digestive and urinary tracts:

Stomach—gastritis, colic, pyloric spasm, ulcer, nervous indigestion.

Intestines—colic, cramps, diarrhea, enteritis, intestinal parasites, colitis, lead poisoning, spastic constipation.

Gall Bladder—the occasional case of gallstones.

Ureter—spasm, colic, gravel, calculi, neurogenic stricture, ureteritis.

Bladder—colic, calculi, cystitis, tenesmus, sphincter spasm, and nervous frequency of urination, as in dogs during field trials, during shows, or during clinical examinations.

Urethra—spasm, colic, stone, urethritis.

Today's practitioner is offered a variety of antispasmodic drugs. This serves to emphasize the incidence and clinical significance of smooth muscle spasm in small animals, but it complicates the choice of a spasm-relaxing drug. Selection of an antispasmodic should be on the basis of what is known of the anatomic and physiologic

factors involved in production of these spastic states and in their eradication. These drugs fall into three main categories:

1) Neurotropic antispasmodic drugs which act through nerves.
   a) Sympathetic stimulants, as characterized by epinephrine and amphetamine (benzedrine).
   b) Parasympathetic depressants, as characterized by belladonna (atropine), novatropine, and syntropan.
2) Musculotropic antispasmodic drugs which act directly on the muscle, as characterized by papaverine and trasentin.
3) Neurotropic-musculotropic antispasmodic drugs, which act both ways, as characterized by at least one synthetic amine compound—methyliso-octenylamine, octin (Bilhuber-Knoll).

NEUROTROPIC ANTISPASMODIC DRUGS

According to Goodman and Gilman,[1] the action of epinephrine and amphetamine on the gastrointestinal tract can not be predicted. It depends upon the functional level of activity at the time of administration. Apparently, the normal stomach is first stimulated, but later inhibited. The pylorus usually manifests increased tone. It is possible, however, that paradoxical relaxation may occur. The action on the small bowel is uncertain. Benzedrine may cause nausea, belching, flatulence, anorexia, abdominal cramps, and an increase or decrease in bowel movements. Diarrhea or constipation may also occur. Cardiac palpitation, extrasystoles, excitation, dry mouth, chills, and marked hypertension or hypotension are also sequelae under certain conditions of dosage and patient susceptibility. These authors consider these sympathetic stimulants to have an equivocal antispasmodic action and to lack the antispasmodic usefulness of the belladonna alkaloids and their synthetic substitutes.

Goodman and Gilman further state that atropine does not significantly alter normal gastric secretion in man, although full doses may decrease secretion of mucin and enzymes. The action of atropine on secretion by intestinal glands is not significant. The belladonna alkaloids significantly reduce tone and peristaltic activity of the gastrointestinal tract. They are antispasmodic to the ureter musculature, especially when it is in spasm. They have a mild relaxant effect on the biliary ducts and gall bladder and a depressant action on the detrusor muscle of the bladder, especially when it is hypertonic. Intoxication frequently occurs in the clinical use of the belladonna substances, and even small doses sometimes cause cardiac slowing, dryness of the mouth, dilatation of the pupils, nausea, and vomiting. Larger doses may cause rapid heart rate, palpitation, dilated pupils, marked thirst, blurring of vision, restlessness, fatigue, ataxia, excitement, urinary urgency, and difficulty of micturition. Dry mouth may appear before a satisfactory effect on the bowel is obtained, and medication may have to be continued until evidence of intoxication is present, especially early difficulty in vision, dizziness, palpitation, and nausea. The synthetic atropine substitutes, such as novatropine and syntropan, seem to be weaker in action and shorter acting than atropine itself.

TABLE I—Sympathetic and Parasympathetic Influences

Organ	Sympathetic Stimulation	Parasympathetic Stimulation
Stomach	Quieted	Stimulated
Mobility and tone	Decreased	Increased
Sphincters	Contracted, as a rule	Relaxed, as a rule
Secretions	Inhibited	Increased
Intestines	Quieted	Stimulated
Mobility and tone	Decreased	Increased
Sphincters	Contracted, as a rule	Relaxed, as a rule
Secretions	Inhibited	Increased
Gall bladder and ducts	Relaxed	Contracted
Urinary bladder	Uterine retention	Uterine expulsion
Detrusor	Relaxed	Contracted
Trigone and sphincters	Contracted	Relaxed
Ureter	Relaxed	Contracted
Mobility and tone	Decreased	Increased
Uterus (Human)	Mostly stimulated	Contracted or relaxed
Pregnant	Stimulated	Stimulated
Nonpregnant	Stimulated (?)	Variable

MUSCULOTROPIC ANTISPASMODIC DRUGS

Goodman and Gilman state that papaverine and other of the benzoquinoline alkaloids have only insignificant effects on the nervous system and a definite direct antispasmodic action on smooth muscle itself.

Papaverine hydrochloride (1:100,000) is capable of promptly counteracting spasm produced in isolated rabbit jejunum by barium chloride (1:10,000). In smooth muscle exhibiting phasic activity, papaverine decreases tone, amplitude, and frequency of contraction. Smooth muscle responding to papaverine includes that of the bronchi, gastrointestinal tract, ureters, biliary tract, and blood vessels. The antispasmodic action of papaverine, however, is not clinically useful in all instances. The drug lacks the general usefulness of the nitrites as an antispasmodic. The toxicity of papaverine is very low.

NEUROTROPIC-MUSCULOTROPIC ANTISPASMODIC DRUGS

These drugs, typified by octin, relax smooth muscle spasm both by nervous mechanisms and by directly depressing fibers of hypertonic or spastic smooth muscle. Raymond[2] states that: "One of the earliest of these (synthetic antispasmodics) to be introduced into clinical practice was octin, an octenyl methylamine. The pharmacology of this compound was given in a series of publications which reported it to be appreciably longer acting than papaverine but to resemble the latter in being musculotropic in action. It does, however, have a number of other effects, prominent among these being a pronounced sympathomimetic (neurotopic) activity."

CHOICE OF ANTISPASMODIC DRUG

I prefer octin, which is both neurotropic and musculotropic. It would seem entirely reasonable to assume that this drug, which relaxes smooth muscle both by nervous mechanisms and by direct action, is preferable to a drug which has but one of these dual and complementary effects. I have found this to be true in my practice.

Antispasmodic Drugs in Urologic Cases.—A review of medical literature confirms my clinical observations regarding the preferability of the neurotropic-musculotropic antispasmodic drug in smooth muscle spasm of the urinary tract. For example, Lund and Zingale[3] found that when octin was used: "Relief of proved ureteral spasm has been prompt (within 2 to 4 minutes) . . . . In 50 per cent of these, relief was complete. . . . In 30 per cent, there was some degree of relief sufficient to cause the patient to be comfortable. . . . In eight cases, we believe the drug was instrumental in causing spontaneous passage of stones that were present." Pennington[4] brought out that: "For the past two years I have used octin in my urologic practice, both office and hospital, and have found it to be a potent drug which, at least in my hands, proved more effective than any other antispasmodic I have used."

Unlike these urologists, I have not had clinical experience with octin in cases of renal calculi and ureteral calculi. (Like other veterinarians, I find it exceedingly difficult to diagnose renal or ureteral calculus in animals. Even when a well-developed radiographic technique is used, most veterinarians would present at best only a qualified diagnosis of the condition.) However, results have been fully as gratifying as those of Lund and Zingale and Pennington when octin was used in smooth muscle spasm associated with cystitis, gravel or stones in the bladder, urethritis, and urethral calculi. Usually, I give octin orally. The effect is in most instances apparent within ten to twenty minutes and the relaxation persists for three and one-half to four hours. If oral medication is not effective, or is not completely effective, and in cases where immediate relief is desired, intramuscular injection of octin hydrochloride has proved satisfactory.

Illustrative of results with octin in small animal urologic cases is the following condensed typical case history: An Irish Terrier, male, 8 years old, was operated on for urethral calculi. Severe urethral spasm developed postoperatively. One octin tablet (2 gr.) four times daily gave prompt and complete relief of the pain and discomfort resulting from the smooth muscle spasm.

Antispasmodic Drugs in Gastrointestinal Cases.—Gruber,[5] of the department of pharmacology, Jefferson Medical College, studied the smooth muscle relaxant action of octin upon the intact intestine of nonanesthetized dogs by means of the balloon and water manometer method. He found that: "There occurred, immediately, simultaneous decrease in general tonus and in the height of the rhythmical contractions and a temporary cessation of the peristaltic activity of the gut." Huidobro *et al.*[6] found that in normal man: "Methyl octenylamine (octin) injected subcutaneously in doses of 100 mg. produced, in the 4 volunteers studied, a great decrease in the intestinal movements. . . ."

My clinical use of octin in cases of smooth muscle spasm of the gastrointestinal tract, proved by fluoroscopy, has convinced me of the value of this antispasmodic as a major component of the therapeutic regime of these cases. During a period of eight months, I treated at least 20 puppies and young dogs from the same kennel for infectious virus colitis. These animals had severe diarrhea and definitely spastic bowels. They invariably ran a temperature of about one degree. Fecal cultures were always negative. In the past, it would take four or five months to clear up such cases; it now takes about one month. My present regime consists of octin to relax spasm and relieve colic pain; tannalbin (Bilhuber-Knoll) to check diarrhea; trisulfonyl (U. S. Vitamin) and/or cremothaladine (Sharp and Dohme) to help clear up the infection; and a diet consisting essentially of barley mash, barley water, and lean, cooked, ground beef. For example, a 6-week-old Pug with virus colitis was given half an octin tablet four times daily and 1/2 teaspoonful of cremothaladine twice daily. A 9-month-old Boxer received one octin tablet every four hours, plus 2 teaspoonfuls of cremothaladine four times daily. And a very ill 4-month-old Boxer, also with virus colitis, was given 2 octin tablets and 2 tannalbin tablets every four hours, and 1 dram of trisulfonyl four times daily.

Octin has also served me excellently in other spastic conditions of the bowel. A Fox Terrier with spastic colitis, confirmed by fluoroscopy following a barium meal, had been unsuccessfully treated for several days. This animal was unable to retain food or liquids. Octin oral therapy over a two-day period failed to overcome the intestinal spasm. Then, 1 cc. (1 1/2 gr.) of octin was given intramuscularly twice a day. The dog was much improved by the initial injection. Shortly thereafter, it would take and retain both water and meat. There could be no question of the antispasmodic action of octin in this case, as relaxation of the bowel was proved by fluoroscopy.

Another interesting case was one of lead poisoning in a 6-month-old Cocker Spaniel. This dog exhibited classic symptoms of plumbism, including gastroenteritis and colicky pain severe enough to make the dog moan. An intramuscular injection of 1 cc. of octin quickly reduced the intestinal spasm and pain, and relief from pain was maintained by means of 2 octin tablets, given orally, every four hours. The animal appeared to be pain-free at the end of twenty-four hours of octin therapy. Of course, appropriate antidotal and supportive measures were also employed.

I have also successfully used octin in a case of intestinal obstruction. A 9-year-old Scottish Terrier was vomiting and was also bleeding from the rectum. When examined, the temperature was 99.8 F. Fluoroscopy revealed a foreign body. Immediately thereafter, I operated, removed from the small intestine a portion of a rubber bone, and established an end-to-end anastomosis. Octin was given postoperatively to quiet the bowel, which had been reflexly stimulated by the foreign body and the operation. Intravenous gelatin was given to protect the integrity of the blood pressure and circulation and penicillin was administered. Recovery was uneventful.

Possibly my most interesting experience with octin had to do with a 2-year-old male Collie with a history of epileptiform convulsions, which had been unsuccessfully treated by five or six other veterinarians during the preceding twelve months. Inasmuch as all clinical tests were normal, and in view of the highly bred character of the animal, I could only conclude that I was dealing with a reflex epilepsy whose neurologic origin was the spastic state of smooth muscle of the hyperirritable colon. On the basis of this premise, I put the dog on a bland diet and gave him 1 octin tablet (2 gr.) twice daily. There has not been a convulsive episode in the four months since I first prescribed octin and a bland diet.

SUMMARY

Smooth muscle spasm of the gastrointestinal and genito-urinary tracts is frequently observed in small animal practice. This spasticity often is the result of reflex stimulation of smooth muscle fibers of the digestive tract or urinary tract by local irritation due to trauma, organic lesion, foreign body, bacterial infection, parasites, and the like. Drugs which relax spastic smooth muscle fall into three categories: (1) neurotropic antispasmodic drugs, which act by stimulating the sympathetic, or depressing the parasympathetic, nerves which supply the involved muscle; (2) musculotropic antispasmodic drugs, which directly

depress the muscle fibers which are in spasm; and (3) neurotropic-muscultropic antispasmodic drugs, which act both ways. Anatomic and physiologic considerations favor the use of the neurotropic-musculotropic type of antispasmodic drug, the best of which I have found to be octin (Bilhuber-Knoll).

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Nervous Acetonemia

The two cows pictured here, suffering from nervous acetonemia, provide an interesting study, as they were the only cows owned by the farmer and both animals were affected at the same time.

Cows affected with nervous acetonemia. Note the cow at right chewing on barbed wire.

Both animals recovered promptly following the administration of chloral hydrate. They were so nervous that intravenous injection was not possible.—*James O. McKee, D.V.M. (OSU '43), Owensboro, Ky.*

Rats should not be overlooked as spreaders of trichinosis.

The Veterinarian and the Ring Test

The growing use of the Brucella "ring test" (ABR) as a presumptive test for brucellosis infection in cattle demands that some consideration be given to the manner in which the test shall be used and the personnel by which it will be administered. Unless the test is subject to rather definite regulation, it is almost certain that sooner or later it will be subjected to abuses which will tend to negate its merits in both the professional and the public mind.

An effort should be made to preserve the propriety and value of this test in the control of brucellosis. The first step would be the standardization of an antigen to be used widely if not universally. The second step would be to insure its use only by veterinarians or under immediate veterinary supervision. Because, on the surface, the test seems to be very convenient, very simple, and very easy to apply, it is necessary that the personnel actually using the test be cognizant of its limitations and its shortcomings. Unless there is such a general understanding, there is certain to be confusion and a conflict of opinion as the test is used more and more widely. In other words, the future of the test will be determined not so much on the extent to which it is applied as upon the professional manner in which it is used. If it is widely used by untrained or unscrupulous operators, the growing use of the test can confuse more completely both professional and public appraisal of the brucellosis eradication program.

The Brucella ring test is definitely a professional and scientific test which should be used by, or under the immediate supervision of, professional men. It is not a plaything to be used indiscriminately by poorly trained or untrained laymen.—*L. R. Davenport, D.V.M., Illinois.*

Coccidioidomycosis.—Seven cases of coccidioidomycosis have been reported from Argentina, although two of these reports have not yet been published. The mycological characters of the Argentine strains are apparently identical with those of the North American strains.—*Mycopathologia*, 4, 1949:315-326.

It has been estimated that about 20 per cent of all breeding sows fail to conceive when mated.

NUTRITION

Prevention of Cobalt Deficiency

New York must now be classed with Wisconsin, Michigan, New Hampshire, North Carolina, and Florida in containing cobalt-deficient areas for cattle and sheep. In these states, at least, supplemental cobalt feeding is to be recommended. Addition of approximately 2 Gm. of cobalt sulfate or other soluble cobalt salts per ton of dairy feed should be sufficient for cows. If a high protein dairy supplement is fed, the amount may be increased to about 4 Gm. per ton. Calf starters should contain about 6 Gm. per ton. If the cobalt is to be supplied in salt mixtures, about 0.5 oz. per 100 lb. of mixture is adequate.—*S. E. Smith, Ph.D., Cornell University.*

Higher Levels of B Vitamins Recommended for Pigs

Liberal supplementation of drylot rations with certain B vitamins (calcium pantothenate, riboflavin, niacin) helped to increase daily gains, aided the prevention of deficiency diseases, and reduced by 22 to 25 per cent the amount of feed required per unit of gain in weanling pigs. The study—made by McMillen, Luecke, and Thorp at Michigan State College—indicated that swine require higher levels of these three vitamins than experiments with synthetic rations had suggested. Supplementation with other components of the B complex, including B_{12}, did not produce additional benefits.—*J. Anim. Sci., Nov.*, 1949.

Penicillin Activity Enhanced by Cobalt

When cobalt chloride was added to test agar at the rate of 0.1 to 10 parts per million, the effectiveness of penicillin in inhibiting growth of *Staphylococcus aureus, Escherichia coli, Proteus vulgaris,* and *Bacillus subtilis* was increased two- to four-fold. In reporting this work, Strait *et al.*, of the California College of Pharmacy, suggest that the cobalt may serve to sensitize the bacteria by bringing them to the logarithmic phase of multiplication, when they are most susceptible to the action of penicillin.—*J. Am. Pharm. A.*, 37, (*April*, 1948) :133-135.

Effect of Storage on Protein Levels

The nutritive value of the proteins of cereal grains stored under conditions preventing insect infestation and mold growth is not appreciably altered by seed respiration over long periods (700-1,000 days) (*J. Nutr.*, Dec. 10, 1949). This is not true, however, for soybeans, the proteins of which may suffer considerable nutritional damage after one year of storage. The distinction may reside largely in the fact that the living part of the seed, the embryo, constitutes only a small part of the cereal seed but a predominant part of the legume seed.

Hormones Aid Lamb Production.—Faster gains and better utilization of feed were credited to hormone treatment of wether lambs in a 68-day feeding test at the Purdue experiment station (*J. Anim. Sci.*, Nov., 1949). The hormone was given subcutaneously, in pellet form, in the shoulder region. The lambs got either stilbestrol in a dose of 12 or 24 mg., or 10 mg. of testosterone. Both hormones produced faster gains on less feed, but the testosterone-treated group also seemed to have a more desirable market finish.

Thyroid Influence on Pig Growth.—A sharp reduction in growth rate and feed intake, and severe myxedema, was produced in weanling pigs fed thiouracil as 0.1 per cent of the ration. Thyroprotein, in contrast, was responsible for significantly increased growth rate when fed at levels ranging from 0.0088 to 0.0176 per cent of the ration, and in most cases the thyroprotein-fed pigs required less feed per unit of gain.—*J. Anim. Sci., Nov.*, 1949.

If every little pig could receive some type of iron during the first week of life, it would do much to improve the situation with regard to baby pig anemia.—*J. D. Ray, D.V.M., Nebraska.*

EDITORIAL

Regional Cooperation in Higher Education

Regional coöperation in education among the states is not a recent concept. As early as 1905, there were movements among the southeastern states to bring together the various higher institutions in Nashville in order that they might, with their combined resources, provide a regional center for graduate and professional study. Although the plan developed slowly, the idea came to fruition in 1936 and included a coöperative program establishing a great library center.

Regional education became a matter for general agreement by the governors of the Southeast at a meeting in Ashville, N. Car., Oct. 19-21, 1947. At another meeting of the Southern Governors' Conference in Tallahassee, Fla., in February, 1948, a Compact was approved constituting the signatory states as an area for regional education. The Compact was signed by the governors of Alabama, Arkansas, Florida, Georgia, Maryland, Mississippi, South Carolina, Tennessee, and Texas, all of whom were in attendance. Subsequently, the governors of Louisiana, North Carolina, Virginia, and West Virginia also signed.

At still another meeting of the governors of this same region (*see* JOURNAL, April, 1949:263), they and 200 educators voted to request their respective state legislatures to appropriate $1,736,000 to finance regional schools so that adequate facilities could be provided for students in medicine, veterinary medicine, dentistry, and some other lines of graduate work. The result of that meeting in the veterinary field was that four institutions were designated to provide services in veterinary medicine,—Alabama Polytechnic Institute, Tuskegee Institute, the University of Georgia, and Oklahoma A. & M. College. They will accept 119 first year students under the regional arrangements, and will receive $1,000 per student per year from the state.

Quality and Quantity of Education Improved

Regionalism in education, the university officials believe, is a way to improve both the quality and quantity of advanced college training at a minimum cost. For example, there are five veterinary medical schools within the region. To provide planned facilities and develop a new first-class veterinary college would cost close to $3,000,000. Thus, the saving to a state under the regional plan is considerable. Besides, it helps existing institutions to strengthen their teaching programs rather than add other colleges, possibly second rate, to compete with the universities that now serve the South.

Many states are duplicating in their colleges what those in nearly all states are doing; and, in many fields, no state is doing a first-rate job. No state can supply the best in every phase of education, because of lack of money or because of insufficient students to create a natural school. Therefore, regional planning and coöperation would appear to be the answer.

Regional planning in graduate and professional education has grown from a proposal to a program in a little over a year. Appropriations either completed or proposed by the several states for the support of regional education in veterinary medicine are as follows: Florida, $33,000; Georgia, $9,000; Louisiana, $12,000; Maryland, $36,000; Mississippi, $12,000; North Carolina, $42,000; Oklahoma, $6,000; South Carolina, $36,000; Tennessee, $36,000; Texas, $18,000; and Virginia, $14,000.

Use of State Appropriations

This will be used on the following basis. Alabama Polytechnic Institute will enroll 30 students from within its own state and 10 from the adjoining states of Arkansas and Louisiana. The University of Georgia will have 20 state students and 30 from Maryland, North Carolina, West Virginia, and Virginia. Tuskegee Institute will enroll 9 Negroes from Alabama and 41 additional Negroes from the remaining states.

Under the pooling arrangement, the states will certify students as eligible based

on criteria which they will establish. However, each university will select students according to its own admission policies and standards.

The South, through this plan, can build and develop a solid system of graduate and professional schools that will equal any in the country. The implications of this new pattern in higher education are far reaching and will have a profound influence on colleges and universities everywhere. The Compact provides that as a state establishes a quota in a veterinary medical college, it will be privileged to nominate eligible students to fill that quota. Should the state fail to complete its quota, the additional places will be offered to some of the other states. However, if a state has established a quota, say of 10 students, and provides only 5, it will nevertheless pay a minimum of $7,500 to the veterinary medical college at which the quota had been established, — the basic minimum of three fourths of the amount of the quota will be paid regardless of the number of students actually entered.

Resolution on Practitioners Brucellosis Committee

In submitting the following resolution adopted by his association, Dr. R. A. Hendershott, Secretary of the United States Livestock Sanitary Association, makes the following statement:

"Undoubtedly, the veterinary practitioner is or should be the keystone of the arch of brucellosis or any other disease-control and eradication program. His position as medical advisor to his client on matters pertaining to livestock health places upon him a very great responsibility to not only his client but to the American public. His earnest support of accepted programs of disease eradication, in the formulation of which he should take an active part, can bring about the desired result. His lack of support or open opposition to the programs can definitely retard or completely sabotage such programs. In the final analysis, either the everlasting thanks or condemnation of the livestock industry will reside on his doorstep.

"May we always work shoulder to shoulder to assist the greatest industry on earth —the livestock industry."

The resolution follows:

WHEREAS, the United States Livestock Sanitary Association has been the recipient of a communication from the Practjtioners Committee of the American Veterinary Medical Association requesting closer coöperation with regulatory officials in the administration and advancement of the brucellosis-eradication program, and

WHEREAS, this aforesaid communication requests that wider employment of the services of the veterinary practitioner be utilized in blood letting, vaccinating, advising owners relative to sanitary control measures designed to bring about the eradication of brucellosis from the livestock of the nation, and

WHEREAS, we of the United States Livestock Sanitary Association deeply appreciate the sincere and earnest offer of assistance from veterinary practitioners in attaining the goal we seek, namely, the eradication of brucellosis, and

WHEREAS, we, as a regulatory group charged by law to eradicate or control infectious communicable diseases of livestock and diseases communicable from animal to man, realize the importance of the aid the veterinary practitioner can render and do, now, as we have always in the past, solicit the assistance of veterinary practitioners in the promotion of the program; the education and guidance of our livestock men in the employment of sanitary measures; the vaccination of stock in accord with adopted programs for the area, and for other services that he can render in the nation-wide program of eradication of brucellosis, and

WHEREAS, it apparently is now recognized that there is need for greater and closer liaison between private veterinary practitioners and those responsible by law in the regulatory field, and

WHEREAS, we, of the regulatory field, entertain and experience a keen sense of loss of opportunity for contact with practitioners at the annual meeting of the American Veterinary Medical Association through the discontinuance of the section on sanitary science, therefore

BE IT RESOLVED, That every effort be inaugurated to augment the feeling of mutual responsibility, respect and closer coöperation between veterinarians as such regardless of their respective chosen fields for the practice of their training as veterinarians to the end that the industry we both serve may be benefited in the ultimate.

In the maintenance of an animal hospital, a good system of permanent records is essential.—*R. E. Ruggles, D.V.M., Illinois.*

The veterinarian should not forget the humanitarian side of his professional work, because he is responsible for alleviating and preventing an enormous amount of suffering among lower animals.—*R. A. Kelser, D.V.M., Pennsylvania.*

CURRENT LITERATURE

ABSTRACTS

Blood Agglutination Test for Avian Tuberculosis

Only 5 of 40 antigens tested showed a high degree of specificity when mixed with serum from tuberculous chickens and from normal chickens. Of 282 birds from four farm flocks, 44 reacted to the tuberculin test and each of these also gave a positive agglutination reaction. However, 14 additional birds were positive on the agglutination test, but negative on tuberculin test.

Although the test is still new, results so far would indicate that it requires less time than the tuberculin injection in the wattle, and that it can be done at the same time as the whole blood test for pullorum disease. The tested birds can then be held until the reaction is ready to read so that one handling of the birds will be avoided.—[*A. G. Karlson, M. R. Zinober, and William H. Feldman: A Whole Blood, Rapid Agglutination Test for Avian Tuberculosis — A Preliminary Report. Am. J. Vet. Res.*, 11, (*Jan.*, 1950) :137-141.]

DDT Toxicity in Chicks

DDT and chlordan are extremely toxic to chicks although no symptoms characteristic of this poisoning are produced in the chicks. Mortality was high when either DDT or chlordan were used in concentrations of 0.5 per cent. Lethane, on the other hand, appeared to be less toxic to young chicks.—[*M. M. Rosenberg and H. E. Adler: Comparative Toxicity of DDT and Chlordan to Young Chicks. Am. J. Vet. Res.*, 11, (*Jan.*, 1950) :142-144.]

Enterohepatitis in Turkeys

When a culture of *Histomonas meleagridis* was serially passed through turkeys, the incubation period became much shorter and deaths occurred earlier. Mortalities reached the highest peak after a culture had been serially passed three times. Cultures isolated from field outbreaks, and not carried on artificial medium, did not follow this pattern, primarily because they already had passed through birds repeatedly.

The authors describe a method for preparing inoculum for experimental work with histomoniasis or blackhead. The livers of poults recently dead, or destroyed at the height of the disease, were immediately thinly sliced with a knife and pressed through a fine screen. This material was diluted with saline or beef extract broth to a consistency thin enough for injection with an ordinary 50-cc. syringe with a rubber tube attached. The length and diameter of the tube were varied depending upon the size of the turkey to be injected. The rubber hose was inserted into the rectum to the iliocecal junction where 5 cc. of the material was slowly discharged.

Using this procedure for uniform inoculation of test birds, the authors were able to develop a procedure which provides a rapid, satisfactory means for screening and testing drugs against histomoniasis.

One interesting observation of this experimental work was that the liver lesions of turkeys recovering from the experimental disease regenerate very rapidly and without fibrosis.—[*J. H. Sautter, B. S. Pomeroy, and M. H. Roepke: Histomoniasis (Enterohepatitis) in Turkeys. I. A Procedure for the Screening and Testing of Drugs. Am. J. Vet. Res.*, 11, (*Jan.*, 1950) :115-119.]

Life-Cycle of the Heartworm

The authors report the completion of studies which, for the first time, work out the complete life cycle of *Dirofilaria immitis*. The infected larvae of this worm are transmitted percutaneously to the body of the dog by the bite of the mosquito. The larvae then migrate to the submuscular membranes, to the subcutaneous tissues, etc., as the intermediate location. During this time, they penetrate the tissues and continue their growth which, at the time of introduction, is about 1.0 mm. The present paper reports that upon completion of the intermediate developments, the larvae proceed directly to the right ventricle of the heart, their last parasitic location. This trip is made eighty-five to 120 days after infection, by which time the larvae have attained the length of 3.2 to 11.0 cm., and they make this stage of the migration through the vein. —[*S. Kume and S. Itagaki: Studies on Dirofilaria Immitis II. Observations on the Life-Cycle in the Dog as the Final Host: Japanese J. Vet. Sci.*, 11, (*April*, 1949) : 13-24.]

Phenol Anthelmintics in Dogs

Ten of 26 substituted phenol compounds demonstrated value in removing ascarids, hookworms, and tapeworms from the test animals, but none were effective against whipworms. The authors were unable to demonstrate a definite relationship between the chemical structure and the anthelmintic action of these drugs.

Structural formulas are given for many of these

compounds and there is a long table of case reports showing the use of all 26 of these substituted phenol compounds.—[*H. M. Martin: Observations on the Anthelmintic Value of Substituted Phenolic Compounds in Dogs. Am. J. Vet. Res.*, 11, (*Jan.*, 1950) :58-69.]

Prevalence of Human Brucellosis

Workers at the University of Tennessee, College of Medicine, cultured tissues from apparently normal human surgical patients. They recorded *Brucella abortus* from three of 34 prostates and one of 43 fallopian tubes. The authors suggest that there may be more brucellosis in human beings than has been suspected and that this may explain the brucella cultures which have been recovered from cases with Hodgkin's disease.—[*Leon V. McVay, Frances Guthrie, I.D. Michelson, and Douglas H. Sprunt: Isolation of Brucella Organisms from Apparently Healthy Individuals. Proc. Soc. Exptl, Biol. and Med., 69,* (1948) : 607-608. *From Biol. Abstr., Section F, June-July,* 1949: 20.]

Blood Plasma of Domestic Animals

The pathologic and physiologic variations of animal plasma were studied by measurement of its light absorption characteristics. Future studies will include variations occurring because of physiologic and pathologic conditions, with a view of applying these data to clinical diagnostic procedures and the use of various therapeutic agents.

In the current study, four weekly curves for the cow, horse, and sheep showed a remarkable uniformity in the absorption characteristics of the blood for each animal. It was possible to show a hemoglobin component of plasma even when there was no gross visual evidence of its presence. —[*E. C. Stone and M. F. Adams: Studies on Blood Plasma of Domestic Animals. I. Absorption Spectrums of Plasma of Some Individual Animals. Am. J. Vet. Res.*, 11, (*Jan.*, 1950) :91-97.]

Chemotherapy in Enterohepatitis

The authors tested a number of therapeutic agents by first establishing a toxic dose in normal poults and then treating the experimentally infected poults with just a little less than this toxic dose, which they called the maximum tolerated level. Mortality was considered the best criterion as to whether a drug was effective in the treatment of histomoniasis.

The mortality was lower in groups receiving stovarsol and tryparsamide during the first few days after infection. Late therapy has little value and multiple doses are much more effective than single. Age and weight, rapid and sudden temperature and weather changes, and other conditions change so much that the authors believe each experiment should be repeated at least three times before reaching any definite conclusion.

On this basis, they found that stovarsol, tryparsamide, and vioform, in that order, appear to be effective in reducing mortalities from enterohepatitis. Sulfaquinoxaline and iodine vermicide afforded only slight protection. Sulfamerazine, sulfaguanidine, and streptomycin, anthiomaline, dimidium bromide, pentamidine, sodium fluoride, Eagle's compound, and neoarsphenamine appeared to show no therapeutic value.

The information collected indicates very little immunity is developed by infected, treated turkeys.—[*J. H. Sautter, B. S. Pomeroy, and M. H. Roepke: Histomoniasis (Enterohepatitis) in Turkeys. II. Chemotherapy of Experimental Histomoniasis. Am. J. Vet. Res.*, 11, (*Jan.*, 1950) :120-129.]

Infectious Anemia of Horses

Those interested in equine infectious anemia (swamp fever) will be fascinated with this comprehensive article on the subject. Described in interpretative detail are the diagnostic and prognostic conclusions to be drawn from intimate relationships among pulse rate, temperature curve, respiratory rate, coagulation time, blood cell count, appetite, loss of flesh, vigor; variations of conditions from remissions and exacerbations; transmission by cohabitation, ingestion of virus, saliva, sweat, lice, flies, mosquitoes; and variation of virulence. Summed up, the vast research led to one definite conclusion: Enormous doses of the most virulent virus taken into the digestive tract were harmless, but the slightest amount inoculated via a harness sore, prick of a syringe, insect, or surgical instrument implanted the disease.—[*Etienne Bernard and R. Kreis: Infectious Anemia of Horses. Ann. l'Institut Pasteur, Dec.*, 1949].

Hemotherapy of Glanders

Sulfapyridine is reported to stop the progress and effect a complete recovery of guinea pigs experimentally inoculated with glanders. When treatment was delayed until the involved testicles of the glandered male guinea pigs became indurated, "a complete cure tends to be markedly retarded."—[*H. Iwamori: Hemotherapy of Glanders. Jap. J. Vet., Sci.*, 11, (1949) :25-33.]

Pathology of the Bull

The authors present a microscopic description of the genital organs of the bull, including the penis. They call attention to hitherto unmentioned variations in the location of the ampullae ductus deferentis and to the presence of a blind pouch which they call recessus urogenitalis. Two anomalies of the uterus masculinus are described.

A test is described for measurement of the pH values in bull semen, using bromthymol blue as the indicator. Freshly collected undiluted semen, 1 cc., is transferred to the catalase tube by pipette. To this, 5 drops of a 2 per cent solution of bromthymol blue in 96 per cent alcohol are added as indicator. At a pH of 6 or lower, the color is yellow; at 6.4

it changes to yellowish green; at 6.8 to a medium green; at 7.2 to a bluish green; and at 7.6 or higher, the solution is blue. A color chart for reading the test accompanies the article.

Thorough examination of the genital organs of the bull for developmental anomalies and for inflammatory reactions is important, because of the enormous development of artificial insemination in Danish cattle. When the lesion is infectious, the danger is doubled. [*E. Blom and N. O. Christensen: Studies on Pathological Conditions in the Testis, Epididymis and Accessory Sex Glands in the Bull. Skand. Vet.-tidskr.*, 37, (1947) :1-49.]

Brádadaudi, Insidious Disease of Cattle in Iceland

Tests based on the possibility of nutritional deficiencies, including copper deficiency, have failed to disclose the cause of a disease, called brádadaudi, which has killed many cattle in Iceland without visible warning notice. It is comparable with "falling disease" of Australian cattle, the latter considered due to lack of copper. Most cases occur after severe physical strain and many animals fall dead without showing signs of illness. Small hemorrhages in the kidneys and exudation inside the nephron are the only lesions commonly found on autopsy. The incidence varies from year to year, but the peak always is reached in spring and early summer.—[*B. Sigurdsson and P. A. Palsson: A Disease of Icelandic Cattle Characterized by Sudden Death. J. Comp. Path. & Therap.*, 59, (*July*, 1949): 168-175.]

Cardiovascular Changes in Infectious Anemia

Of 34 horses naturally and artificially infected, 3 were suffering from the acute, 8 from the subacute, and 23 from the chronic form of infectious anemia. Blood pressure measurements were taken on 45 additional horses kept in contact with infected horses, and on 23 normal controls.

Arterial blood pressure was measured indirectly on the tail with an aneroid manometer. As a control on the method, the pressure was measured directly in the temporal artery in 2 healthy horses and in 6 horses with infectious anemia. In all cases, there was a reduction of arterial pressure nine or more days before a febrile attack. The maximum reduction was 75 mm. Hg. in systolic pressure, 15 mm. in diastolic pressure.

Venous pressure was measured in the jugular vein with a mercury manometer. The normal pressure was 22 to 33 mm., and that of affected horses was 15 to 30 mm. The reduction in venous pressure occurred at the same time as the change in arterial pressure, and both measurements showed curves characteristic of the form of the disease. In acute cases, the blood pressure curve showed a smooth drop. In the subacute form, the downward trend of the curve was broken by rises in pressure.

Electrocardiograms of 11 foals, 3 of which were in the acute stage, showed a lowered voltage and depression of the T wave occurring five to ten days before a febrile attack.

Examination of the capillaries of the third eyelid revealed a circulatory disturbance at the time of the temperature rise. The background of the field became abnormally pale and the number of capillaries visible per field was reduced from 10 to 4. The capillary lumen was widened and the wall distorted.

The velocity of the blood was measured in 2 healthy and 4 sick horses by means of a stromuhr especially constructed for large animals. The normal rate was 340 to 350 mm. per second. In affected horses, the rate was increased to 360 to 385 mm. per second.—[*F. V. Zakharova, All-Union Inst. of Exptl. Vet. Med.: Cardiovascular Changes in Infectious Anemia of Horses. Veterinariya*, 26, (*Nov.*, 1949) : 27-29]—R.E.H.

Swine Erysipelas Immunization

The authors discuss the various methods of active immunization — simultaneous method, Russian formolized vaccine, Japanese Kondo vaccine, Traub's adsorbate vaccine, and their own adsorbate vaccine. Theoretical superiority of the adsorbate vaccine is pointed out and is based on a study of 70 strains of swine erysipelas. The pathogenicity was tested by the percutaneous method and the results on swine did not always correspond to the pathogenicity for mice. The authors confirmed Fortner's observations concerning the existence of erysipelas-resistant families of swine. They conclude that present evidence does not permit a conclusion regarding the reliability of hemagglutination in judging potency of erysipelas immune serums.—[*Scheller and Severl: Contributions to the Swine Erysipelas Problem. Tierärztl. Umschau*, 3,4, (1949) :29-33.]—F. A. TOMP.

Salmonellosis in Otter

A case, supposed to be the first infection of *Salmonella typhimurium* in otters (*Myocastor coypus*), is described. Symptoms were general malaise and debility, listlessness, hair erect and dull, intense dyspnea, and marked anorexia. No cases of sudden death were observed. Chronic cases showed emaciation, listlessness, fatigue, and articular lesions with tumefaction and pain.

Autopsies, including bacteriologic, histologic, and parasitic studies were conducted on dead and killed animals resulting in isolation of strains of *S. typhimurium* in all cases.

Vaccination of 47 animals with a formolized autogenous vaccine was successful and further studies along this line are under way.

Predisposing factors to the disease in its epizootiologic form are: lack of sanitation, dietary deficiencies, parasitism (*Trichuris nutriae, Strongyloides myopotami*, and Eimeria oöcysts), disturbances at weaning time, overcrowding, and sudden changes in temperature.—[*J. L. Gil León, C. A.*

Mazzini, E. J. Torre: Communication on Salmonella Typhimurium Infection in Otters. Rev. Med. Vet. (Argentine), 30, (1948) : 246-253.]—O. A. LOPEZ-PACHECO.

Murine and Canine Leptospirosis in Cuba

This is a study of the incidence of leptospirosis of murine and canine origin in Havana, Cuba. The principal object is to establish a method that, systematically used, will permit the epizoötiologic investigation necessary to provide the index of danger to a community after the murine index is known.

The method comprises the following: All animals obtained for laboratory examination must be submitted alive to the investigator. Following Walch—Sorgdrager, the method can be outlined as follows: (1) direct microscopic examinations; (2) serologic examinations; (3) inoculations; (4) cultures.

Direct microscopic examinations and inoculations may be considered, according to the authors, the basic points for the epizoötiologic studies and sufficient to meet the ordinary sanitary needs; the others to be used as accessories in special cases according to circumstances.

The index of infection found in the animals can very easily be used to determine the degree of danger for the human population in the infected zone and should be carried on routinely in the laboratories established for that purpose.

Professor Pérez Vigueras carried on his work on canine leptospirosis using the agglutination test, and concluded that it is the most disseminated disease among the animals in Havana. Since then, the authors have been on the lookout for cases of human leptospirosis of canine origin.—[*Arturo Curbelo and Viola Márquez: Importance of Epizoötiological Investigation in the Incidence of Leptospirosis in Human Beings. Vida Nueva, (Cuba)* 4, (1949) :89-100.]—O. A. LOPEZ-PACHECO.

Spontaneous Fractures of Vertebrae in Swine

Five cases of spontaneous fractures of the lumbar segment of the spinal cord were studied macroscopically and microscopically. Postmortem examinations revealed, in all cases, fractures at the site of the epiphyseal cartilage accompanied with osteomyelitis and mucoid destruction. In the bony parts of the neighboring vertebrae, chronic regressive processes have developed osteoid tissue and periosteal osteophytes. The osteophytes may press upon the spinal nerves and the spinal cord, which may result in semiparalysis and paralysis even before the fracture occurs. It was not possible to determine, with certainty, the real cause of these spontaneous fractures. Presumptive evidence is presented that, in particular cases, *Erysipelothrix rhusiopathiae* provoked local infection in the epiphyseal cartilage due to an earlier damage caused by rickets.—[*V. Turner: Contribution to Histopathology of Spontaneous Fractures of Vertebrae in Swine that Had Been Used for the Production of Swine Erysipelas Antiserum. Vet. Arhiv,* 19, (1949) :163-189.]—E. FROELICH.

BOOKS AND REPORTS

General Veterinary Pathology

This is a condensed and simplified presentation of the theories and explanations which the student of general veterinary pathology should know. These are presented in a form which will stimulate the student to correlate his reasoning and reach his own conclusions, rather than to memorize a series of disjointed or unrelated facts or to achieve a superficial speaking knowledge of the subject.

The subject matter is divided into 11 parts ranging from the introduction and the history through the genetic and constitutional factors, nutritional, thermal, chemical, mechanical, and radiational agents which are responsible for disturbed function; the microörganisms and parasites involved; the disturbances which cause regressive changes in the cells; disturbances of the circulatory system; regeneration of tissue; morphology, classification, and meaning of inflammation, and some of the specific inflammations (tuberculosis, glanders, actinomycosis, and botryomycosis); tumors and neoplasms; and then, finally, the genetic or prenatal and postnatal influences leading to abnormal body development.

The book covers a wide range, but was not designed for the advanced student, because it does not provide specific or complete information but rather a balanced, general pathology.—[*Lehrbuch der Pathologie für Tierärzte. By Oskar Seifried, Paul Cohrs, and Rudolf Baumann. (In German.) Cloth. 457 pages. 139 illustrations, including 13 color plates. Ferdinand Enke, Stuttgart, Germany. 1949. Price 36 marks.*]

Animal Diseases in South Africa

A majority of the diseases considered have almost universal distribution, but this book places emphasis on those which are of particular interest in Africa or are confined to that continent.

Divided into three sections, this book discusses diseases as they are caused by: (1) bacteria (aërobic and anaërobic), (2) protozoa, and (3) viruses and rickettsiae. This arrangement makes it much more suitable as a text for students than as a reference for practitioners. Differential diagnosis is the primary problem of the practicing veterinarian, and arrangement of diseases by species affected lends itself more readily to this end than does arrangement by causative agents.

Each chapter is arranged in the usual order: history, distribution, etiology, transmission, symp-

tions, diagnosis, lesions, treatment, and eradication or control. Each chapter carries an adequate bibliography for supplementary reading.

Although published in 1949, the foreword and the preface are dated May, 1948. Reports of the several diseases are comprehensive, and treatment is discussed as of 1948. This means that the early work with penicillin is included, but later antibiotic agents are not.

If the value of the book can be judged by the use made of it, as the foreword by P. J. DuToit says, this reviewer believes that it will be highly useful to professors and teachers, good supplementary reading for students, but will not be used as a regular reference work by the busy practitioner.—[*Animal Diseases of South Africa. By M. W. Henning. Cloth. 879 pages. 2nd ed. Illustrated. Central News Agency, Ltd., Commissioner and Rissik Streets, Johannesburgh, South Africa. 1949. Price* £3.5.0.]

Radiology in Small Animal Practice

This book, which was first published under the title, "Radiology in Canine Practice," is a second edition, completely revised and partly rewritten to permit inclusion of recent developments in this rapidly growing field. The text of the first edition has been amplified by adding more than 50 new illustrations, some as replacements for older pictures of inferior quality. Another addition is a section on radiotherapy by Dr. Myron Thom.

The book is divided into four parts. Part I discusses the principles, equipment, and technique of radiology and includes a chapter on protective measures. Part II deals with the diseases and injuries of the bones, first in general and then by specific bones and joints. Part III is devoted to the soft tissues of the body, including the internal organs. Part IV confines itself to radiotherapy, superficial and deep.

The material is particularly well prepared and presented. The information is set forth in direct and concise statements, and the generous use of illustrations helps to clinch each point. No subject is accorded superficial attention, but each item is dealt with in such a way that the practicing veterinarian can quickly review and apply it to a case under observation or treatment.

The type is excellent, being sharp, reasonably bold, and sufficiently large for easy reading. The paper, also, is of exceptionally good quality, so that the radiographs reproduce clearly and effectively. Only one item, the use of breed names, stands in the way of unqualified approval, and that concerns an editorial rather than a substance problem.

It is evident that the author and the publisher did not intend to capitalize the various breeds of dogs, except when one of the appelations denoted a geographic location or name of a person, *i.e.*, Scotch terrier, Gordon setter. Two inconsistencies are noted, however, which detract from the excellent editing of the book: Spitz is capitalized and the "g" in Great Dane is also capitalized, for which we see no good reason. The AVMA editors prefer to capitalize the names of all breeds of animals: Persian cat, Chow dog, German Shepherd, Cocker Spaniel, Wire-haired Fox Terrier, Ayrshire cattle, Shorthorn cattle, Thoroughbred horse, because we believe it lends dignity to veterinary medical literature.

"Radiology in Small Animal Practice" is an excellent text, one which the owner of radiographic equipment will use frequently, one which the practitioner without x-ray equipment will use almost as frequently because the cuts show graphically just what the fingers are palpating, and one which will convince more practitioners that they can render a better service to small animals and their owners by securing the equipment needed to achieve similar results with each fracture case presented for diagnosis and treatment.

No veterinarian should be without this book, and every copy sold should be used constantly.—[*Radiology in Small Animal Practice. By Gerry B. Schnelle, V.M.D., with a section on Radiotherapy by Myron Thom, D.V.M. 2nd ed. Cloth. 364 pages. 305 illustrations. The North American Veterinarian, Evanston, Ill. Price* $8.00.]

Diseases of Sheep and Goats

From the press of a famous publisher, faithful to the codes of the medical sciences, comes a book on the common ailments of the small, domestic ruminants. Its chapters on elementary pathology and physiology, together with its semitechnical diction, indicate its dual purpose for the owner and the doctor. In effect, it covers the diseases of sheep and goats without baffling the shepherd or offending his doctor. The review of literature blending scientific husbandry with veterinary medicine, bluntly or gracefully, has been a touchy job in this country ever since veterinary schools were established some seventy-five years ago.

The excellent books on diseases of livestock published by act of Congress for wide and free distribution among stockmen, and the deluge of sundry bulletins issued as a public service caused a great deal of audible grumbling by veterinarians through the years, and the privately written ones such as *Law's Veterinary Adviser* and the Baker-Periam *Stock Doctor* were loudly protested without surcease. But, a change of attitude toward these dual-purpose books is shown by the more generous acceptance of the recent works of R. R. Dykstra, W. T. Baker, Leon F. Whitney *et al.* which, including the French book at hand, are first cousins and not unwelcome, inasmuch as all of them rate as useful, worthy, informative, and classical to a livestock world seeking the knowl-

edge required to carry on intelligently. Moreover, scientifically up-to-date material of the dual-purpose sort is valuable to veterinarians called to unfamiliar ground like, for instance, the pet doctor in the presence of a flock of sick sheep or a large animal doctor in a kennel of racing Greyhounds for the first time. *Diseases of Sheep and Goats* (trans. title) and kindred works contain information all veterinarinas ought to, but can not, know because of veterinary medicine's complex ramifications. Barring books wherein the medical topics were written by unqualified laymen, these dual-purpose books are all to the good. They have built a lot and destroyed nothing at all. The protest against passing usable information to the livestock farmer is a vanishing far cry from the forest, and not to read, or possess, such books as references is futile abnegation.—[*Maladies du Mouton et de la Chevre. By Dr. C. Craplet, Assistant Professor of Zoötechnics, College of Grignon. Vigot Frères, Paris, France.* 138 *pages.* 1950.]

The Supreme Commander Reports

A brief report of the landing of troops in France, establishment of the lodgement area, the break through, the advance to the Seine and the German border, consolidation on the frontier, and the operations to reach and cross the Rhine and envelop the Ruhr are described in a report by the supreme commander to the combined chiefs of staff on the operations in Europe of the allied expeditionary force from June 6, 1944, to May 8, 1945.

For anyone interested in military maneuvers and the breakdown of the German defense in the recent war, this authentic booklet presents information in an interesting manner.—[*The Supreme Commander Reports.* 120 *pages. Printed on excellent paper. The Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price* $1.00.]

The Toastmaster's Handbook

This book concentrates on the fundamentals of a toastmaster, including his responsibilities and the techniques to be used. It gives many illustrations of actual introductions and of response to introductions, along with interesting stories for both types.

It tells how to plan a program, publicize an event, obtain guest speakers, and how to maintain a time schedule. It also goes into the methods used for covering up when a speaker fails to appear and how to squelch a heckler, along with many other situations. There is a total of 2,000 items, including introductions and responses, epigrams, unusual stories, anecdotes, and quotations.

It is a book which every veterinarian will appreciate, because sooner or later he is called upon to respond to an introduction or to introduce a visitor. In this situation, the book will give a quick and ready approach to the problem and will help materially in reducing the nervous tension of the speaker.—[*The Toastmaster's Handbook. By H. V. Prochnow. Cloth.* 374 *pages. Prentice Hall Inc., 70 Fifth Ave., New York* 11, *N. Y.* 1949. *Price* $3.95.]

Dissection of the Cow

As the name implies, this book was written primarily for the student in anatomy, but it is done in such a way that it can also be a valuable guide to the practitioner who is called upon to perform surgery on the cow.

Because the book is divided into many specific areas, each dealing with a comparatively small portion of the body, the veterinarian preparing for an operation can either secure the needed portion from a cadaver at a rendering plant, or compare the descriptive matter of the text with the diagrams and drawings in a standard anatomy. Inclusion of a few basic sketches would add materially to the value of the book in the hands of the practicing veterinarian who needs a quick review in anticipation of surgery.

The text material is accurately prepared and neatly presented. The names of muscles, nerves, vessels, and other important structures are underscored for easy assimilation and review. Emphasis has been placed on the regions of the body which are important clinically and physiologically, but the importance which they will assume in the study of surgery and the diagnosis and treatment of disease are not mentioned as the dissection progresses. Such mention would make the book more interesting to the student and more valuable to the practitioner.—[*Guide to the Dissection of the Cow. By Robert E. Habel. Cornell Cooperative Society, Barnes Hall, Ithaca, N. Y. Paper.* 127 *pages.* 5½ x 8½ *inches. Offset Printing. Ring binder.* 1949.]

Fur Animal Disease Research

This two-page leaflet, issued coöperatively by the State College of Washington in Pullman and the Bureau of Animal Industry of the U.S. Department of Agriculture, tells of the services available at the fur animal disease research laboratory at the State College of Washington.

The sponsoring agencies provide $30,000 a year for studies of nutritional, bacterial, parasitic, and other diseases in furbearing animals. Dr. John R. Gorham (WASH '46) is the veterinarian in charge of the laboratory, and he is assisted by a staff of technicians, attendants, translators, and secretaries.

The services of the laboratory are available to veterinarians and to fur breeders. The laboratory itself is in the classroom building of the College of Veterinary Medicine in Pullman, but the entire set-up of this unique organization is geared to aid the fur animal raiser.—[*Fur Animal Disease Research. Issued coöperatively by the State College of Washington, Pullman, and the USDA Bureau of Animal Industry, Washington* 25, *D.C.* 1950.]

Proceedings of the USLSA

The printed proceedings of the U. S. Livestock Sanitary Association were distributed to the membership in March. The book contains a trenchant account in condensed form of livestock health as reported (mainly) by the public functionaries laboring in that fundamentally important field, an account of "what is" and "how come" in animal health from coast to coast. Watching these periodical reports grow bigger and cover more ground year by year fortifies the veterinarians' place in human affairs and their ability to hold it.

The USLSA was started by livestock sanitarians, not by veterinarians, but the membership became predominantly professional by mutual consent, owing to the technical character of the work needed to shore up the socio-political problems involved in equalizing interstate relations. As Governor Frank J. Lausche said in his "Welcome to Ohio" address at the annual meeting in Columbus last October, such work is "the basis of being fellow Americans." In his "Response," State Veterinarian J. V. Knapp of Florida added: "We know that the life of man as well as nations depends upon agriculture and a healthy animal industry." Could more be said in that many words about the reason for the existence of the USLSA or about the foresight of its founders and successive administrations?

But all is not rosy. In the livestock sanitary field, the irresistible force meets the immovable body—States Rights. As President T. O. Brandenburg stressed, completely harmonious relations between state and federal forces have yet to be accomplished. States Rights have been flanked, somewhat, but the ambition to command is not likely to vanish. Happily, the angry invectives once flung between the state and federal forces have changed to the more subtle language of polite society.

The statement, "The wastage of the two-headed system is appalling," quoted from the 1949 presidential address, shows that an understanding between state and federal forces has not been reached. To drive toward that end, President Brandenburg contended that although the federal doctors should be paid from federal funds, they should be placed under the command of the state veterinarians. These quotations are dug out of the report of 1949, not in the sense of criticism, but merely to show that the moot question is still alive.

A review of the contents reveals the importance the bovine diseases, tuberculosis and brucellosis, occupy in the minds of the officials vested with the responsibility of limiting losses from all animal diseases. Bovine tuberculosis, often loosely referred to as eradicated, and bovine and swine brucellosis are the sole subjects of discussion in 72 pages of the Proceedings. Likewise, 55 pages are accorded to poultry disease-control problems. Another interesting observation is the extent of the deliberations on rabies, a disease which too often is considered to be a problem only in dogs, but which these guardians of livestock health discussed at length in 20 pages of the book.

The report of the committee on brucellosis is of special interest because it includes revised rules for the establishment and maintenance of certified brucellosis-free herds and modified accredited areas, and a concise report on swine brucellosis with plans for control. Appreciation is also expressed to the AVMA Committee on Practitioner Participation in Brucellosis Eradication for their interest and assistance in formulating the report.

As catalogues of contemporary animal plagues and control programs in vogue, these annual reports of the USLSA are superior pieces of scientific literature which have powerful influence on the clinical field. Outstanding last year were the papers on brucellosis, anaplasmosis, trichomoniasis, avian lymphomatosis and pneumoencephalitis, rabies, rheumatoid disease of swine, community auction sales, protozoal infections of turkeys and the more disputed details about diagnoses and vaccinations.—[*Proceedings, Fifty-Third Annual Meeting of the U. S. Livestock Sanitary Association. Edited by R. A. Hendershott, Secretary-Treasurer. 285 pages. Paper. Waverly Press, Inc., Baltimore, Md.* 1950. *Price* $3.00.]

A Boy and His Dog's Doctor

Veterinarians and their wives will be glad to know that a book has been written for children that describes quite accurately and favorably the work of a veterinarian. The story tells about a boy who goes on calls with a veterinarian, sees him treat a cow and a colt, and splint the fractured wing of a canary. Later, Danny takes advantage of his experience and splints the wing of a robin. Veterinarians will appreciate how Danny counsels with his "dog doctor" and the friendly way he and the veterinarian collaborate to have the injured robin transported to Florida for the winter by airplane. Judging from the interest displayed by the reviewer's children when the book was read to them, it should be a favorite story of all children and particularly those of veterinarians. It is cleverly illustrated.

With one or two exceptions, the veterinarian is protrayed in a desirable manner. Quizzical eyebrows may be raised by veterinarians when they read, "I'll give her a pill through this blower," when referring to the treatment of a cow, or when Danny places the splint on the robin's wing, but all in all it is a delightful little story. It would seem to be a must for every veterinarian's home and office.—[*Danny and the Dog Doctor. By Jerrold Beim. Illustrated by Edgar Levy. Cloth. 25 pages. William Morrow & Company, New York.* 1950. *Price* $2.00.]

Better Riding

Here is a book for every veterinarian who rides, or deals with riding horses and with clients who ride. Through the use of the stroboscopic

camera, the author has taken sequence pictures of a number of the riding gaits and of the jump. All are taken for the purpose of demonstrating the value of the "balanced seat."

These multiple-image sequences are cruelly revealing, but the method of using them in the 16 sections of the book will help any novice to become an expert horseman. It will show every rider how to become more proficient by the persistent use of the balanced seat. The book shows how to derive more pleasure from riding, how to train the mount to be a superior horse, and how the rider may enjoy improved health as a result of this exercise.

The book does not deal with the diseases or ailments of horses, but with those practices which will help to avoid bruises and undue stresses and strains. A study of the book will definitely aid the veterinarian in providing the key which will permit his clients to derive the fullest enjoyment from riding by becoming better riders and, thus, coördinating the movements of the horse and those of the rider.—[*Better Riding. By Ben Lewis. Pictures by Andre Du Rona. Cloth. 160 pages. Profusely illustrated. Lear Publishers, 105 E. 15th St., New York 3, N. Y. 1949. Price* $5.00].

Received But Not Reviewed

Annual Report of Sanitary Committee of the Mayor and Council, including a Report from E. D. King, Jr., D.V.M., Meat and Milk Inspection. Valdosta, Ga. 18 pp.

Cumulative Index to the Journal of Nutrition. Vol. 16-36 inclusive. The Wistar Institute of Anatomy and Biology, Philadelphia, Pa. 155 pp.

Hard-Surfaced Floors for Farm Buildings. Bulletin 393, May, 1949. South Dakota Agricultural Experiment Station, Agricultural Engineering Department, South Dakota State College, Brookings. 28 pp.

Societies Affiliated with the National Research Council. National Research Council, 2101 Constitution Ave., N.W., Washington 25, D.C. 41 pp.

Oversea-Post. English Edition No. 10, No. 34. Universal Economic Review, Uebersee-Post, "Carlton-Haus," Nuernberg 2, Germany, U.S. Zone. 175 pp.

Dean's Annual Report. Harvard School of Public Health, Cambridge, Mass. 90 pp.

External Parasites of Livestock, Methods of Control. Bull. 406-A, Extension Service, Colorado A. & M. College, Fort Collins. 20 pp.

A Reëxamination of the Structure of the Mammalian Liver. I. Parenchymal Architecture. By Hans Elias. Reprint from *Am. J. Anat. 84,* (March, 1949):311-334.

Veterinarians at Work. Reprinted from *Army Information Digest.* Armed Forces Information School, Carlisle Barracks, Pa. 8 pp. of pictures.

Studies on Salmonellosis in Puerto Rico. By O. Felsenfeld, L. M. Gonzalez, and Viola M. Young. Reprint from *The Puerto Rico Journal of Public Health and Tropical Medicine, 24,* (Sept., 1948): 9-15 and 24-26.

Report of Director, Abattoir and Livestock Market Department, City of Johannesburg, South Africa. 17 pp.

Report of Ontario Veterinary College, by Dr. A. L. MacNabb, Principal, Guelph, Ont. 138 pp.

Cattle Grubs. Circular 522, New Jersey Agricultural Experimental Station, New Brunswick. 4 pp.

Blue Print for Health. Spring, 1950. Blue Cross Commission, American Hospital Association, 425 N. Michigan Ave., Chicago 11, Ill.

Kindness in Action. The Anti-Cruelty Society, 157 W. Grand Ave., Chicago 10, Ill. 16 pp.

Effect on Dogs of Feeding Flour Treated with Chlorine Dioxide and Nitrogen Trichloride by F. I. Nakamura and M. L. Morris. Raritan Laboratories, Inc., Metuchen, N. J. Reprint from Cereal Chemistry, Vol. XXVI, No. 6, Nov. 1949. 7 pp.

Medical Microbiology and Hygiene, Section IV. Excerpta Medica, 111, Kalverstraat, Amsterdam C., The Netherlands. 4 pp.

REVIEWS OF VETERINARY MEDICAL FILMS

Producers of motion pictures considered to be directly or indirectly related to veterinary medicine are invited to submit pictures to the AVMA Motion Picture Library for review. Reviews of pictures considered by the reviewers to be of interest to veterinarians, and students in colleges of veterinary medicine, or suitable for use by veterinarians for showing to lay audiences, will be published in the JOURNAL. Reviews will give credit to the producer and director and will specify under what circumstances and from whom the film is available.—The Editors.

Coramine, a Physiological and Pharmacological Study with Demonstrations of Clinical Results.—Sound, 16 mm., color; running time approximately forty minutes. Produced by Audio Productions Inc. for Ciba Pharmaceutical Products, Inc., Summit, N. J., with certain pharmacologic scenes prepared by Ciba Research Laboratories. Available from Goshen Laboratories Inc., Goshen, N. Y.

The physiology and the nervous control of respiration is reviewed in the first part of this film. There are some excellent photomicrographs in this section. Some of the other factors controlling respiration are illustrated. The effect of coramine on morphine anesthetized experimental animals is depicted. Its effect on blood pressure, the heart, and the central nervous system is also shown, followed by a section showing the chemical structure of coramine and its effect on human beings. The last part of the film shows the antipellagric therapeutic value of the drug in both dogs and man. Although excellently photographed and well pre-

pared, portions will seem a little drawn out and technical for most veterinarians. In general, it is both interesting and educational. It will be especially well received by all small animal practitioners and students.

The Science of Milk Production.—**Sound, 16 mm., color; running time forty minutes. In cooperation with W. E. Petersen, Ph.D., University of Minnesota, this film is presented by the Ralston Purina Co., St. Louis 2, Mo., and available from the Public Relations Division of that company.**

The distribution of this film has been so widespread that it hardly seems necessary to review it comprehensively. However, the photography and diagrams used to illustrate the experiments conducted at the University of Minnesota are so good that there is justification for again commending them. The narration by Dr. Petersen adds much to the interest of the presentation. The interest of the viewer is immediately acquired by the comparison of a cow to a factory. For thirty minutes the picture describes the physiology of milk production; the anatomy of mammary tissue; the effect of mastitis and how it can be prevented; the relationship of hormones to, and the importance of environment and preparation for milking on, milk production. A portion of the film, added by the Ralston Purina Company, points out the need for properly feeding the dairy cow. The film is particularly designed for lay audiences but is also of interest as a review for veterinarians and students.

A Pharmacologic Study of Metrazol.—Silent, 16 mm., color; running time about fifty minutes. Prepared by R. P. Walton, M.D., and O. J. Brodie, M.D., Department of Pharmacology, Medical College of South Carolina, Charleston. Available from Bilhuber-Knoll Corp., 377 Crane St., Orange, N. J.

This long film gives a general description of metrazol, reviews the depressant effect of several anesthetics, shows the antagonism of metrazol to depressant drugs, and its circulatory and respiratory effects. Under the general description, the chemical formula, physical characteristics, and action of metrazol are depicted. The comparison of the effect of metrazol and strychnine in the frog is interesting. The arousing action of the drug in dogs and mice is shown. The characterization of the depressants administered to dogs will be of real interest to all veterinarians, as will the part of the film entitled, "Antagonism of Depressant Drugs," which shows how much metrazol shortens the period of anesthesia. The part of this section devoted to mice is too long and veterinarians will find it slightly boring. Perhaps due to the length of the film, or perhaps due to the detailed explanation of the procedures and equipment employed, the last part of the film (circulatory and respiratory effects) is not as interesting as the first three parts, and will not be of much interest to veterinarians.

The first three parts are excellent and are particularly interesting because most of the demonstrations are made with dogs. For a silent picture this film is too long, but the first three sections will be well received by all veterinarians and veterinary students.

Modern Trends in Intravenous Therapy.—Silent, 16 mm., color, well titled; running time about twenty-five minutes. Prepared and developed by Robert L. Patterson, M. D., director, Department of Anesthesiology, and George L. Wessels, M.D., superintendent, Allegheny General Hospital, Pittsburgh, Pa. Presented by and available from Abbott Laboratories, North Chicago, Ill.

The ingenious ways in which intravenous therapy equipment can be used is well presented by this film. The technique for venoclysis including the preparation of the equipment, the patient, and the product are clearly demonstrated. A section of the film deals with the management of a blood bank, including the collection and storage of the blood. Plasma collection and storage in the frozen state, and its uses, are also shown. Part of the purpose of the film undoubtedly is to show the advantages of using closed, disposable equipment for intravenous therapy. Although all of the scenes refer directly to the treatment of man, veterinarians will appreciate seeing how venoclysis can be performed with modern equipment. How much of the material presented will have practical applications for veterinarians is a question, but the film will hold the interest of those who see it, and of students as well.

Ye Olde and The New in Medical Research.—Sound, 16 mm., color; running time approximately twenty-five minutes. An Argo film supervised by the pharmacologic and biologic staff of Pitman-Moore Company, Indianapolis 6, Ind., and available from that company.

The evolution of medical science from the old days of superstitions relating to numbers and signs up to the modern, up-to-date, present-day methods employed by medical research is interestingly shown. The ancient work of the alchemist, the development of the microscope, and the discovery of the sulfonamides are cleverly depicted. After the historical review, a somewhat detailed presentation of the testing and production of a sulfonamide and a vaccine produced from chicken embryos is described. Some of this description seems lengthy and detailed, but it does show the amount of work involved in testing and producing a drug or biological product in this era. It will be of general interest to veterinarians and students; also suitable for showing to lay audiences, such as farmers, druggists, and others interested in animal health and disease control.

THE NEWS

Eighty-Seventh Annual Meeting
Miami Beach – August 21-24, 1950

Arrangements for the Miami Beach meeting, August 21-24, are nearly completed—and a look at the literary and entertainment schedules leaves no question that it is going to top all previous AVMA meetings in quality and quantity of attractions. In fact, never before has it been possible to arrange a convention program with such a wide range of appeal and with so many diversified features.

Scientific Papers Will Tell Developments in Veterinary Medicine

Literary sessions, 1950-streamlined to give a condensed yet complete story of everything new in veterinary medicine, are sure to win favor with all registrants. At the air-conditioned Municipal Auditorium, which will be headquarters for major convention activities, visitors will be impressed with the structural scheme that permits them to register, view more than 50 exhibits, renew acquaintances, and attend sessions and social functions—all on one spacious, well-arranged floor.

Added to this is the fact that, according to present plans, this will be the first convention of any

—Miami Beach News Bureau Photo

Several of the 361 glistening hotels in Miami Beach are shown in this view at the corner of Collins Ave. and Indian Creek Drive.

kind to be held in Miami Beach's new Auditorium. Construction crews are now finishing the building and it is expected that city officials will give ceremonious recognition to the AVMA event in dedicating the hall.

A large delegation of Cuban veterinarians is planning to put their own touch to the gala proceedings. The word has gone out that they will stay at one hotel in Miami Beach where their presence will be proclaimed with an array of flags and a rhumba band.

GOLFERS WILL HAVE THEIR DAY AT AVMA TOURNAMENT

When it comes to recreation, the big problem will not be what to do, but what to do first. Among the many choices will be swimming, fishing, sightseeing by boat, visits to the nearby Fairchild Tropical Garden and the Everglades National Park, and night clubs and theaters. For many, however, the choice will be golfing. Not ordinary golfing, but sharp competition in the AVMA tournament on Tuesday afternoon, August 22.

The tournament will have divisions for constituent association teams, individual AVMA members, members of student chapters, and official representatives of commercial exhibitors. The winning constituent association team will be awarded the AVMA trophy. Prizes also will be awarded in all other divisions of competition. Dr. H. M. Stanton, of Chicago, winner of the 1949 American Animal Hospital Association tournament, is assisting the AVMA office and the Committee on Local Arrangements in formulating rules and procedures. Dr. J. R. Simione, of North Miami, Fla., has been named chairman of the subcommittee on golf and will direct local arrangements for the tournament. Watch the June JOURNAL for a further announcement about this event.

HOTEL RESERVATIONS NOW BEING ACCEPTED

Members are urged to make reservations immediately for their stay in Miami Beach. Dr. S. C. Wasman, of Miami Beach, housing chairman for the convention, has arranged for an ample number of rooms and suites to take care of the large crowd expected, but he cautions that those who submit requests at a late date may be unable to get the most desirable accommodations. Turn to pages 34 and 35 of the advertising section in this issue for a list of the hotels which will serve the AVMA meeting, read the information given, and send in the form that is provided. By acting promptly, you will be assured of getting exactly the kind of accommodations you want.

Dr. Moss Appointed Chairman of Committee on Diseases of Small Animals

President C. P. Zepp, Sr., has appointed Dr. L. C. Moss, Colorado A. & M. College, Fort Collins, as chairman of the Special Committee on Diseases of Small Animals, to serve for the remainder of the current association year in place of Dr. Otto Stader who asked to be relieved as chairman. Dr. Stader will remain as a member of the Committee.

—*Miami Beach News Bureau Photo*

A charter fleet of trim cruisers will be available to take AVMA convention-goers on big game fishing trips in the nearby Gulf Stream, when the eighty-seventh annual meeting convenes at Miami Beach, Aug. 21-24, 1950.

Cubans Making Elaborate Plans for Postconvention Program

Cuban veterinarians, in coöperation with the Committee on Local Arrangements, are planning an action-filled postconvention program in Havana that will be a colorful climax to the Miami Beach activities.

Dr. E. D. Clawson, of Miami, chairman of the local committee, met in Havana on March 12 with Drs. Mario Stincer, Angel M. Morales, and Luis Garcia Robiou to lay plans for the Cuban tour. Dr. Morales, secretary of Cuba's national association of veterinarians, made it known that the profession of his country extends a unanimous welcome to the AVMA and that no effort will be spared to make the event a truly Latin American fiesta.

Members of the tour party will have their choice of air or overnight boat travel and will have rooms at the beautiful Hotel Seville Biltmore in downtown Havana. A travel agency selected by the local committee will make all arrangements for transportation, hotel accommodations, and sightseeing, and the cost will be modest.

According to tentative arrangements, the group will depart for Havana the day after the convention closes and, regardless of whether they go by air or boat, will reach there before the program starts on Saturday morning, August 26. They will spend this morning on a conducted tour of Old and New Havana, stopping at places of scenic and historic interest, and then will go to the Army Remount Station, about 10 miles outside the city. Here, the Veterinary Corps of the Cuban army will entertain them at a noontime banquet. Their host will be Col. Bernardo Luna, chief of the Corps.

Due to mechanical inefficiency, the four-color drawing facing p. 306 in the April JOURNAL was omitted from a few copies. If missing from your JOURNAL, the color page will be sent immediately upon receipt of a postcard addressed to the: AVMA, Editorial Department, 600 S. Michigan Ave., Chicago 5, Ill.

Veterinarians and their families will have time for shopping and dinner upon returning from the Remount Station, after which they will see Havana night-life at its Saturday best, enjoying refreshments and dancing at one of the city's popular cabarets.

On Sunday, August 27, the group will be guests at a luncheon party given by the University of Havana's faculty of veterinary medicine on the campus. Cerveceria Modelo, a brewing company owned by the Bacardi rum makers, also has offered to entertain the tour party in their country gardens, if the postconvention schedule will permit. A visit to famous Morro Castle also is planned.

Unless members of the party desire to extend their stay independently, they will leave Havana late Sunday afternoon, August 27, arriving in Miami by plane that evening or by boat the next morning.

Rates for the Havana trip as well as for the preconvention Florida tour will be announced in the June JOURNAL. (For information on the preconvention tour, see April JOURNAL, p. 321.)

—Leo Fruthoff Photo

This smiling trio of Havana veterinarians is getting an early start on plans for the postconvention trip to Havana. They are (left) Dr. Mario Stincer, delegate of the Cuban Veterinary Medical Association to the AVMA House of Representatives; Dr. Angel Morales, secretary of the Cuban association; and Dr. Luis Garcia Robiou, of the milk inspection service.

Proposed Amendments to Constitution and Administrative By-Laws

The following amendments which were proposed at the 1949 annual meeting of the House of Representatives (*see* Proceedings, Oct. 1949, JOURNAL, pp. 297-298) will come up for final action by the House at the annual meeting in Miami Beach, Aug. 21-24, 1950. They are published again for the information of the membership and, together with the new proposals which follow, will be re-published for three months, so that final action can also be taken on them this year as provided in Section 3, Article XIII, of the Administrative By-Laws.

Amendments Proposed in 1949

AMENDMENT NO. 1

To amend Section 1 (a) of Article XI, Administrative By-Laws, relating to Constitutional Sessions, so that it will read as follows:

Section 1.—*a*) Time: An annual session shall be held in each calendar year, the exact date of which shall be fixed by the Executive Board at least four months prior to the time decided upon.

[Purpose.—To remove the present limitations on the time when the annual session may be held; namely, between July 1 and December 31. There may be years when it would be desirable to hold the meeting prior to July 1.]

AMENDMENT NO. 2

To amend Section 5(a) of Article X, Administrative By-Laws, relating to junior members, so that it will read as follows:

Section 5.—*a*) Junior members recommended as having been members in good standing for two years in their respective junior chapters and who are vouched for by two members of the Association may be admitted to membership without the payment of the membership fee of $5.00, provided the applications are filed within thirty days after the date of their graduation. To retain membership in the Association, members admitted under these provisions from junior chapters, within a period of three years following graduation, must join a constituent association.

[Purpose.—To allow eligible members of junior chapters the privilege of joining the Association immediately following graduation without waiting until they become located and have acquired membership in a constituent association as is now required of regular applicants; also to put them on the same status as other members, within a reasonable time, with respect to being members in good standing of a constituent association.]

New Proposals

NEW PROPOSAL NO. 1

To amend Section 3, Article XII, Administrative By-Laws, relating to Councils and Committees, so as to make the present Special Committee on History a standing committee, as recommended in the report of the Committee presented and adopted last year. The following paragraphs would need to be added to Section 3, Article XII, following part 14:

15. COMMITTEE ON HISTORY

a) *Personnel.*—This committee shall consist of five members, one of whom is to be appointed each year for a term of five years. The president shall appoint the chairman. The first members shall be appointed for one, two, three, four, and five years, respectively, for terms expiring in the same order.

b) *Duties.*—It shall be the duty of the first committee appointed to make a survey and, subsequently, to outline the specific scope of the work to be done by this committee, this survey and outline to be submitted to the Executive Board and House of Representatives for approval. Thereafter, the committee shall, each year, execute a portion of the work that has been approved and, from time to time, shall draw up additional plans and recommendations for its work for submission to the Executive Board and House of Representatives.

NEW PROPOSAL NO. 2

To amend Section 3, Article XII, Administrative By-Laws, relating to councils and committees, so as to make the present Special Committee on Ethics a standing committee as recommended in the report of the Committee presented and adopted last year. The following paragraphs would need to be added to Article XII following proposed new part 15 (*see* above):

16. COMMITTEE ON ETHICS

a) *Personnel.*—This committee shall consist of five members, one of whom is to be appointed each year for a term of five years. The president shall appoint the chairman. The committee may select one of its members to serve as secretary, if desired. The first members shall be appointed for one, two, three, four, and five years, respectively, for terms expiring in the same order.

b) *Duties.*—(The present Special Committee on Ethics shall, in its annual report for 1950 to the Executive Board and House of Representatives, define its recommendations for the duties of the standing committee. When adopted, these recommended duties shall then become the regular duties of this committee and shall be printed in this section of Article XII in lieu of this paragraph.)

NEW PROPOSAL NO. 3

This proposal was formulated by the Research Council at its meeting on Nov. 28, 1949, was sub-

mitted to the Executive Board on Nov. 29, 1949, and was approved for consideration and action by the House of Representatives at the 1950 annual meeting.

To amend Section 3, Article XII, Administrative By-Laws, relating to councils and committees, specifically subparagraph (c) of part 12, Research Council, so that it will read as follows (changes are in italics):

c) Duties.—The Council shall develop plans and projects, based on the establishment of fellowships with any funds that may be provided, for the purpose of encouraging *graduate and* postgraduate study by *veterinarians* and developing more and better veterinary investigators, *teachers, and practitioners.*

The Council shall serve as a coördinating and correlating body in matters pertaining to veterinary research coming under its jurisdiction. Further, the Council shall, with any funds that may be provided for research on specific problems, determine the conditions, indicate the facilities required, and assign the projects.

Note.—The present last paragraph relating to duties is to remain unchanged.

[Purpose.—To clarify the status of the Research Council with respect to carrying on activities beyond the original definition of its work, such as accepting funds for research on specific projects which may not require a full-time fellowship but which may merit the assistance of the Council in seeing that they are properly set up and placed.]

NEW PROPOSAL NO. 4

To amend subparagraph (a) of Section 2, Article X, Administrative By-Laws, relating to election to active membership. Amend the third and fourth sentences of the paragraph so that they will read as follows (changes are in italics):

The application from a *veterinarian residing where there is* a constituent association shall contain the certificate of its secretary that the applicant is a member in good standing of that body. In the case of an application from a veterinarian residing *where there is no constituent association*, it shall contain the endorsement of two members who know the applicant, one or preferably both of whom shall live in the same country as the applicant.

[Purpose.—As the third sentence now reads, it implies that applications may come only from veterinarians who are already members of constituent associations, which is true; however, the original intent was that a veterinarian, residing where there is a constituent association but not a member of it, and who wishes to apply for AVMA membership, shall first become a member of said constituent association.

As the fourth sentence now reads, it ignores the fact that there are presently constituent associations outside the United States and Canada; namely, in Cuba, Puerto Rico, and the Canal Zone, where prospective applicants may qualify if they belong to said constituent associations.]

NEW PROPOSAL NO. 5

To amend Section 2, Article X, Administrative By-Laws relating to active members, in order to clarify reference to graduates of foreign veterinary colleges "approved by the Council on Education." Amend the second clause of the paragraph so that it will read as follows (changes are in italics):

or, of foreign veterinary colleges approved by the Council on Education *only for purposes of qualifying their graduates for membership in the Association.*

[Purpose.—As the clause now reads, it implies that the Council on Education formally approves foreign veterinary colleges. This is not the case because the jurisdiction of the Council is limited to the United States and Canada with respect to actual accreditation of veterinary colleges. Furthermore, the acceptance of occasional foreign graduates as AVMA members in recent years has been misinterpreted in some instances as tantamount to official accreditation of their schools.]

NEW PROPOSAL NO. 6

To carry out the recommendation made by President-Elect Zepp to the House of Representatives at the annual meeting in 1949 relative to the formation of a planning committee to be elected by the House from its membership (*see* Proceedings, Oct., 1949, JOURNAL, pp. 333-334). This requires an amendment of Article XII of the Administrative By-Laws relating to councils and committees so as to add the following paragraphs after proposed new part 16.

17. EXECUTIVE COMMITTEE OF THE HOUSE OF REPRESENTATIVES

a) Personnel.—This committee shall consist of seven members elected by the House of Representatives from its own membership. All members shall be actively engaged in the branch of service which they are elected to represent. Two members shall represent large-animal practice, one member shall represent mixed practice (approximately 50% large animal and 50% small animal), one member shall represent small-animal practice, one member shall represent teaching and research, one member shall represent federal or state government regulatory services, and one member shall represent the Armed Forces, U.S. Public Health Service, or its state counterparts.

Chairman.—The committee shall each year elect its own chairman, who, in addition to serving as chairman, shall act in a liaison capacity between the House of Representatives and the Executive Board. The chairman shall attend the annual session of the Executive Board but shall not have the right to vote.

Tenure.—Members shall be elected for terms of three years and shall be eligible for reelec-

tion. However, at the initial election, three members shall be elected for three-year terms (one representative of large-animal practice, one representative of mixed practice, and one representative of the federal or state government regulatory services), two for two-year terms (one representative of small-animal practice and one representative of teaching and research), and two for one-year terms (one representative of large-animal practice and one representative of the Armed Forces or public health work). Thereafter, elections shall be so arranged as to maintain the representation as specified under (a).

b) Duties.—It shall be the duty of this committee: (1) to consider all developments relating to veterinary medicine from a long-range viewpoint, to be alert to the changing needs for and demands upon the profession, both private practice and government and institutional work, and make recommendations to the House of Representatives and Executive Board how these changing requirements can best be met for the over-all welfare of the profession; (2) to act in an advisory capacity to the House of Representatives on all matters referred to it; (3) to make a detailed study of reports from association committees and representatives in advance of the annual session, and be prepared to make recommendations to the House on any reports or portions thereof; (4) and, through the Chairman, to act as the voice of the House of Representatives in presenting recommendations from the delegates or members to the Executive Board.

Joint Committee on Foods Approves Two Dog Foods as Complete Rations

The Joint Committee on Foods of the AVMA and AAHA announces the granting of the Seal of Approval to Hill's Dog Food, manufactured by the Hill Packing Co., Topeka, Kan., and to Kellogg's Gro-Pup (meal and ribbon forms), manufactured by the Kellogg Company, Battle Creek, Mich. On the basis of chemical and biological assays, conducted in independent laboratories, these two foods were adjudged to meet the requirements for a "complete ration" for dogs, the basis on which they had been submitted and were tested.

The term "complete ration" is defined by the Committee as "a combination of ingredients which, when fed to a normal animal as the only source of nourishment, will provide satisfactorily for fertility of the male and female, gestation and lactation, normal growth from weaning to maturity without supplementary feeding, maintaining the normal weight of an adult animal whether working or at rest."

The two foods named are the first to be tested and approved as complete rations by the Committee, foods previously granted the Seal having been submitted and tested as "maintenance" rations only. The successful qualification of the two foods under severe tests to determine their actual feeding values indicates the current availability of high quality ingredients to meet standards imposed by the Committee with respect to chemical analysis, protein evaluation, and biological assay, plus processing methods which do not destroy vital food factors.

Brucellosis Symposium

A symposium on brucellosis was held at the National Institutes of Health, Bethesda, Md., Sept. 22-23, 1949, under the auspices of the National Institutes of Health, U. S. Bureau of Animal Industry, and the National Research Council. The meeting was organized by Dr. C. L. Larson of the N.I.H. and Dr. C. K. Mingle of the BAI, with Dr. Larson acting as chairman at all sessions. Veterinarians on the program were: Drs. C. A. Manthei, L. M. Hutchings, W. L. Boyd, H. L. Gilman, B. T. Simms, Jacob Traum, C. M. Carpenter, and R. Gwatkin. Many outstanding papers were presented and are to be published in monograph form by the American Association for the Advancement of Science, 1515 Massachusetts Ave., N. W., Washington 5, D.C.

Lauritz Melchior Heads 1950 National Dog Week

Lauritz Melchior, the world's beloved and renowned "Great Dane," has accepted the general chairmanship of National Dog Week for 1950.

—*Hope Associates Corp.*

Lauritz Melchior, the world famous Metropolitan Opera tenor, is notified of his new duty as general chairman of National Dog Week by Mr. C. M. Olson, president of National Dog Welfare Guild.

This greatest of all Wagnerian tenors and brilliant star of motion pictures will find new acclaim in another career, dogdom, predicts Mr. Ray Hanfield, executive secretary of the National Dog Welfare Guild, official nonprofit national sponsor of National Dog Week. Advanced preparations for the 1950 National Dog Week, to be observed September 24-30, are now under way. The organization's 1949 report of progress records, in quick picture form, the facts and accomplishments of last year's observance.

STUDENT CHAPTER ACTIVITIES

Cornell Chapter.—New officers of the Cornell Student Chapter of the AVMA are John Baker, president; Gerald Thorington, vice-president; Louis Jacobson, treasurer; and Laurence Goodman, secretary. Drs. John Bentick-Smith and George Poppensiek will act as faculty advisors.

s/LAURENCE GOODMAN, *Secretary.*

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Iowa Chapter.—Dr. S. F. Scheidy, Executive Board member from District 2, and director of veterinary research for Sharp and Dohme, Glenolden, Pa., discussed "New Trends in Veterinary Therapy" at the March 8 meeting of the Iowa State Student Chapter of the AVMA.

s/DARYL K. THORPE, *Secretary.*

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Iowa Chapter.—First-term officers of the Iowa State Student Chapter of the AVMA were Keith Giese, president; George Schoel, president-elect; Walter Campbell, vice-president; Marvin Clark, secretary; Melvin Miller, treasurer; Don Perkins, critic; Dr. Dwight Smith, faculty advisor. Class representatives were Robert Ahrens, senior; James Brown, junior; Wilber Kennedy, sophomore; and Clifford Denham, freshman. Cardinal Guild representatives were Les Jacobson and Dale Kelley. Chairmen of standing committees included Jack Watkins, speakers; Walter Campbell, budget; Duane Albrecht, student publications board; Tony Riepma, publicity; Peter Sandberg, union board; Alan Ruan, *Bomb*; Thomas Flynn, library.

Mr. Jack Shelley, chief of WHO radio News Service, gave the address at the annual fall banquet on October 4. Dr. C. D. Van Houweling, director of professional relations of the AVMA, spoke on "The Public Relations of the Veterinarian in Practice" at the October 19 meeting. He described the organization of the national Association and explained its relationship to the individual practitioner.

On November 16, Dr. Edward L. Kozicky, Iowa Coöperative Wildlife Research Unit, spoke on "The Significance of Diseases on Wildlife Populations." Dr. F. B. Young, Waukee, told of some of the aspects of a general practice, at the November 30 meeting.

Mr. Peterson, Iowa State College sculptor, gave an illustrated talk on his art at the January 25 meeting. On February 16, the following officers were elected: William Fennessy, president-elect; G. N. Lukas, vice-president; Daryl Thorpe, secretary; and Robert Peglow, critic. Melvin Miller, treasurer, continues in office. New class representatives are Lloyd Bates, senior; Merrill Vanderloo, junior; Neil Chapin, sophomore; and Russell Anthony, freshman.

s/MARVIN E. CLARK, *Retiring Secretary.*

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Michigan Chapter.—At the Jan. 19, 1950, meeting of the Michigan State Student Chapter of the AVMA, Dr. L. B. Sholl, School of Veterinary Medicine (Michigan), discussed "Clinical Pathology" (with illustrations). Members of the student chapter put on a variety show to entertain visitors at the postgraduate conference on January 25.

Dr. E. S. Weisner, Goshen, Ind., talked on "Problems in Poultry Practice," at the meeting on February 2, and Dr. Howard W. Dunne, School of Veterinary Medicine (Michigan), presented an illustrated lecture on "The Production of Foot-and-Mouth Disease Vaccine in Europe and Mexico" at the February 16 meeting.

The following took office the first of April: David Van Meter, president; George Lynch, president-elect; William Burmeister, vice-president; David Reath, secretary; Richard Kratochivil, assistant secretary; Bernard Mleziva, treasurer; and George Zitou, seargent-at-arms.

s/CARL D. OLSON, *Secretary.*

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Missouri Chapter.—The Veterinary Club of the University of Missouri held its regular meeting on March 13, 1950. Dr. H. D. Seigers, Higgensville, Mo., discussed "Veterinary Public Relations."

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Pennsylvania Chapter.—At the March 8 meeting of the Pennsylvania Student Chapter of the AVMA, Dean Kelser spoke on the present curriculum and advised the group of the opportunities of specializing in the various branches of veterinary medicine, and of the openings available to graduate veterinarians in schools of public health.

The following officers will serve the Chapter during the second term of this school year: Sherman Ames, II, president; James A. Himes, vice-president; William C. Greendyk, secretary; and Albert W. Mountan, treasurer.

s/WILLIAM C. GREENDYK, *Secretary.*

WOMEN'S AUXILIARY

Mrs. Charles H. Reid, Treasurer.—The treasurer is the custodian of the funds of the Auxiliary, receiving all moneys and disbursing them only upon the signed order from the president. She is responsible for the Contingent Fund and also the Loan and the Award funds. The

treasurer makes an annual report to the general assembly of the Auxiliary at the annual meeting after an audit has been made of her books by a qualified accountant appointed by the Executive Board of the Women's Auxiliary. The treasurer is a member of the Executive Board and of the Budget Committee, and she is expected to attend and participate in meetings of those committees. Mrs. Charles H. Reid, 13031 Greenleaf

Mrs. Charles H. Reid

St., N. Hollywood, Calif. is an efficient young woman, who has had business experience which qualifies her to carry on her work as treasurer in a competent manner. Mrs. Reid has been active in the Auxiliary to the California State V.M.A., having held all offices in that organization as well as all offices in the Auxiliary to the Southern California V.M.A.

s/(MRS. V. H.) FLORENCE MILLER, *President.*

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What to Wear at Miami Beach in August.—In the June and July issues of the JOURNAL, information will be given in this column concerning the program scheduled for the women at Miami Beach during the AVMA convention, August 21-24.

For those who may be wondering about suitable clothing for Florida in August, a wardrobe selected for a mid-summer holiday in the North will be equally correct for wear when the American Veterinary Medical Association convenes in Miami Beach. Informal clothes are in order and these include tailored and dressy cottons and summer sheers. It will be wise to include a light summer wrap, for the ocean breezes are often a bit chilly in the evening.

Of course, a swim suit is almost a must in this city. With 8 miles of ocean beaches and cabana facilities attached to so many hotels, a daily dip is generally high on the calendar.

Miami Beach offers delightful golfing facilities at its two, 18-hole municipal courses. Those women who intend to squeeze into their schedule a tussle with par should include golfing apparel.

Most Floridians wear sun glasses to minimize the "glare of Old Sol."

Simplicity and comfort are the keynotes of our mid-summer wearing apparel.

s/(MRS. C. E.) HELEN A. BILD, *Chairman, Women's Activities.*

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Hotel Reservations.—For information about hotel reservations for the Miami Beach meeting, August 21-24, see pages 34 and 35 of the ad section.

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Award Presented at KSC.—James L. Palotay, School of Veterinary Medicine, Kansas State College, recently was presented with an award of $25 by the Women's Auxiliary to the AVMA. This award goes to the student making a special contribution which advances the standing of the veterinary college on the campus. Mr. Palotay was chosen by his school because of outstanding research and interest in photography and photomicrography of veterinary pathologic specimens done outside his regular classroom duties. The Auxiliary feels the award is a worthwhile project, and is heartened to know of the accomplishment for which it was awarded this year.

s/(MRS. V. H.) FLORENCE MILLER, *President.*

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Alabama Auxiliary.—The Women's Auxiliary to the Alabama Veterinary Medical Association met in the Houston Hotel, Dothan, Feb. 17-18, 1950, with forty in attendance. The Constitution was read and adopted, and the project for the year discussed. Mrs. B. N. Lauderdale, Montgomery, was elected as delegate to the Miama Beach meeting in August; and Mrs. I. S. McAdory was elected alternate. Mrs. C. H. Poitevint, as president of the Auxiliary, will also attend. The following officers were elected: Mrs. C. H. Poitevint, Dothan, president; Mrs. M. L. Crawford, Marion, vice-president; and Mrs. Carl Jones, Athens, re-elected secretary-treasurer.

s/MRS. C. H. POITEVINT, *president.*

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Colorado Auxiliary.—The Auxiliary to the Colorado Veterinary Medical Association met February 20-22. The coffee hour, held the first morning just after registration, was a real success and was handled beautifully by the girls of the Auxiliary to the Colorado A. & M. Student Chapter of the AVMA. With two luncheons, two coffees, and a dinner and dance, the ladies attending the Colorado Auxiliary enjoyed a pleasant social time. At the business session, the following officers were elected: Mrs. J. R. Durigg, president; Mrs. F. T. Candlin, vice-president; Mrs. Lloyd C. Moss, secretary-treasurer.

s/MRS. LLOYD C. MOSS, *Secretary.*

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Michigan Chapter Auxiliary.—The Auxiliary to the Junior AVMA chapter at Michigan State

College was organized in May, 1949. Its purposes are to better acquaint the wives of the veterinary students with each other and with the field of veterinary medicine.

As the organization was to serve as more than a social gathering, they established, with the aid of Dean C. S. Bryan and Drs. C. F. Clark and G. R. Moore, weekly class periods to gain instruction in the various phases of the veterinary profession. The members of the faculty have graciously donated their time and efforts to make these classes successful.

Highlights of the year's activities include a part in the entertainment program given for the veterinarians attending the postgraduate conference held at the college in January; a tea honoring the wives of the faculty in February; and a tea for the wives of the graduating seniors to be given in May. Election and installation of officers will also take place in May. There are approximately 100 active members.

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Ohio Chapter Auxiliary.—The Auxiliary to the Ohio State Student Chapter of the AVMA, one of the largest of the junior auxiliaries, is an enthusiastic group. The meetings are well attended and the programs have been varied, ranging from parties to educational meetings with speakers. Plans are being made for the annual picnic with the Student Chapter, when the wives will furnish the potluck dinner. On May 21, a tea will be held for the entire group, at which the graduating class will be guests of honor. The following were recently elected to serve as officers for the coming year: Margie Gregory, president; Helen Mallorie, vice-president and program chairman; Charlotte Fosnaugh, secretary; and June Dresbach, treasurer.

s/(Mrs. J. F.) Margie Gregory, *President.*

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Pennsylvania Chapter Auxiliary.—The Auxiliary to the University of Pennsylvania Student Chapter of the AVMA held its first meeting on March 27, 1950, with 30 young women in attendance. The following officers were elected: Mrs. T. A. Rude, Jr., president; Mrs. L. S. Wilson, vice-president; Mrs. R. Probasco, secretary; Mrs. R. Lehman, treasurer; and Mrs. S. F. Scheidy and Mrs. D. G. Lee, faculty advisors. Semimonthly meetings are planned.

s/(Mrs. S. F.) Henrietta K. Scheidy, *Faculty Advisor.*

APPLICATIONS

New Rules And New Forms For Membership Applications

Amendments to the Constitution and Administrative By-Laws were adopted at the 1948 annual meeting for the purpose of integrating membership in constituent associations (state, provincial, territorial, and other associations affiliated with the AVMA) with AVMA membership. These amendments necessitate a change in the vouchers required for indorsement of membership applications and in the printed application form. In effect, the new rules are as follows:

APPLICATIONS FROM VETERINARIANS RESIDING WHERE THERE IS A CONSTITUENT ASSOCIATION.—Such applications shall contain the certification of the secretary of the constituent association in the state, province, or territory that the applicant is a member in good standing of that association. This certification takes the place of the signatures of the two vouchers formerly required for indorsement of an applicant.

APPLICATIONS FROM VETERINARIANS RESIDING WHERE THERE IS NO CONSTITUENT ASSOCIATION.—Such applications shall contain the indorsement of two AVMA members who know the applicant, one or preferably both of whom reside in the same country as the applicant. This method applies to veterinarians residing outside the United States, Canada, Cuba, Puerto Rico, and Canal Zone.

APPLICANTS FROM JUNIOR CHAPTERS.—Junior members in good standing in their student chapters for not less than two years may be admitted without payment of the membership (initiation) fee, provided applications are filed within thirty days of graduation. Such applications must contain the indorsement of two members. To retain membership, such applicants must, within three years following graduation, join a constituent association, assuming that they are going to locate and reside where there is such an affiliated association. (A By-Law amendment to this effect was proposed at the 1949 annual meeting for action at 1950 session. In the meantime, applicants from junior chapters will continue to be admitted as formerly.)

First Listing

Breeck, L. L.
State Capitol, Frankfort, Ky.
D.V.M., Indiana Veterinary College, 1918.
Voucher: R. Brown.

Bryant, Maynard L.
4 Edward St., Montpelier, Vt.
D.V.M., New York State Veterinary College, 1921.
Voucher: W. D. Bolton.

Connelly, James W.
204 Federal Bldg., Topeka, Kan.
D.V.M., U. S. College of Veterinary Surgeons, 1925.
Voucher: E. C. Cannon.

Lemonds, Leo L.
2215 W. 2nd, Hastings, Neb.
D.V.M., Iowa State College, 1949.
Voucher: O. Geisler.

Lengerich, George J.
918 W. 87th St., Chicago 20, Ill.
D.V.M., Cincinnati Veterinary College, 1917.
Voucher: A. G. Misener.

Leupp, Ray E.
586 E. Main St., Logan, Ohio.
D.V.M., Ohio State University, 1949.
Voucher: F. J. Kingma.

Maxwell, E. E.
R. R. 1, Galesburg, Ill.
D.V.M., Iowa State College, 1949.
Voucher: A. G. Misener.

Metz, Eugene T.
Box 205, Brush, Colo.
D.V.M., Colorado A. & M. College, 1949.
Voucher: J. W. Harrison.

Miller, Donald L.
Middlesbury, Ind.
D.V.M., Michigan State College, 1942.
Voucher: W. W. Garverick.

Miller, Major Robert R., USAF, V.C.
Rm. 4A280, Vet. Div., S.G.O., Hdqs.

USAF, Pentagon, Washington, D. C.
D.V.M., Ohio State University, 1943.
Vouchers: W. O. Kester and W. M. Van Sant.

MILLER, W. LA VERN
Deputy State Veterinarian, 512 13th Ave., N., Nampa, Idaho.
D.V.M., Iowa State College, 1943.
Voucher: A. P. Schneider.

MILLIMAN, EARL M.
8061 Gull Rd., Richland, Mich.
D.V.M., Michigan State College, 1944.
Voucher: B. J. Killham.

MOYNAN, JOHN D.
Box 190, Clinton, Ont.
D.V.M., Ontario Veterinary College, 1948.
Voucher: G. A. Edge.

NEELY, JOHN L.
Newman Grove, Neb.
D.V.M., Iowa State College, 1949.
Voucher: O. Geisler.

TREPANIER, MARTIN
W. Hyacinthe, Quebec.
D.V.M., Quebec School of Veterinary Medicine, 1941.
Voucher: P. Villeneuve.

WILLIAMS, RICHARD C.
3721 5th Ave., Moline, Ill.
D.V.M., Iowa State College, 1949.
Voucher: A. G Misener.

Second Listing

ADLAM, GEORGE H., c/o Dr. S. L. Catley, 109 17th Ave., W., Calgary, Alta.
ALEXANDER, SAM A., 320 E. Windsor St., Monroe N. Car.
ASHTON, WILLARD H., 2035 First Ave., N., Payette, Idaho.
BELMAR, HARRY B., Box 284, Dothan, Ala.
BERDAN, LEONARD N., The Rocks, Schoharie, N. Y.
GLOBUS, ROBERT, 758 Boswell Ave., Norwich, Conn.
GREEN, JOE W., Veterinary Science Dept., Purdue University, West Lafayette, Ind.
MYERS, FRED O., 526 S. 3rd St., Corvallis, Ore.
SAVILLE, JOHN M., Chauvin, Alta.
SEDLACEK, GLEN E., 506 Illinois St., Plainfield, Ill.
THOMPSON, ROY A., 218 Centennial Bldg., Springfield, Ill.
VAN AUSDALL, C. A., Edinburg, Ill.
VANDERBILT, WILLIAM H., 3207 Chapel Hill Rd., Durham, N. Car.
VICKERS, CECIL P., P.O. Box 1207, Tallahassee, Fla.

AMONG THE STATES AND PROVINCES

Alaska

A University of Alaska.—The Arctic Health Institute, on the recommendation of the U. S. Public Health Service, has petitioned Congress for appropriation to establish the University of Alaska on the grounds of the Territory's increasing economic development, the importance of studying the health problems of the Arctic region, and the need of encouraging immigration. A program of research in environmental sanitation in anticipation of developing Alaska's potentiality is pointed out as essential. Illustrated booklets showing how little the American people know about "Stewart's Folly" have been submitted to Congress.

California

Clinic for Poisoned Dogs.—The Police Department of Berkeley has established a scientific laboratory for the diagnosis and treatment of poisoned dogs. Reportedly, the step was taken on account of a veritable epizoötic of dog poisonings. It's the story of human inhumanity at its lowest level, an example of the sneaking cowardice, the stealthy tossing of poisoned bait to a neighbor's best friend.

Colorado

Dr. Newsom Retires as President.—After having established an enviable record as a student, professor, and dean in his rise to the presidency of Colorado A. & M. College, Dr. I. E. Newsom vacated that position on Oct. 1, 1949.

Dr. Newsom was never awarded a high school

Dr. I. E. Newsom

diploma, although he completed the full course in three years. Then he registered at Colorado A. & M. and convinced the faculty that he should be permitted to take the junior and senior work first. After this, he finished the freshman and sophomore courses in one year, and the degree of bachelor of science was awarded by the School of Agriculture in 1904. At San Francisco Veterinary College, he completed the three-year course in one year, get-

ting his degree of doctor of veterinary surgery in 1906. A few years later, he enrolled at Kansas City Veterinary College, and again completed the three-year course in one year, 1909. Finally, to make his doctor's degree triplesure, the honorary degree of doctor of science was conferred upon him by the University of Colorado in 1941. The latter degree was in recognition of his extensive and valuable contributions to the study of animal diseases, and his long record as an outstanding teacher.

Born in Colorado City, Texas, on April 13, 1883, of Quaker parents, Dr. Newsom moved to Colorado at the age of 15. His life has been spent as a teacher, research worker, and administrator; and his friends are not surprised that his relief from administrative duties paves the way for work of a different nature—not for retirement. He is writing a book on sheep and their diseases. But, in order to write the best book possible, he wants to include more than he has been able to learn from his own lifetime of research, teaching, and reading. He believes that it is necessary for him to spend some time with the workers in South Africa and those in Australia and New Zealand, in order that the people who read the book may have a complete and unbiased report of the sheep diseases of the world.

Dr. Newsom joined the AVMA in 1909, and has served it in numerous capacities. He was chairman of the Executive Board in 1940-1941, while serving the final year of a term as member of the Board from District 6 (1936-1941). He was elected vice-president for 1924-1925 and again for 1931-1932.

Connecticut

Fairfield County Association.—The Fairfield County Veterinary Medical Association held its regular meeting at The Chimney Corners Inn in Stamford on March 8. Dr. Mark W. Allam, associate professor of veterinary surgery at the University of Pennsylvania School of Veterinary Medicine, Philadelphia, discussed (with colored motion pictures) "Perineal Herniorrhaphy" and "Surgical Diseases of the Canine Vagina."

s/WILLIAM R. LEGGETT, *Secretary.*

Florida

Reunion of Retired Veterinarians.—The annual dinner of retired veterinarians and other veterinarians vacationing in Florida was held at noon in Bradenton on February 15, with 62 present for the occasion. The two oldest veterinarians, in line of service, were Drs. W. Meyers, Winona, Ill., and H. H. Busman, Holland, Mich., both of whom graduated more than sixty years ago. Dr. George Gillie, Fort Wayne, Ind., formerly a member of Congress, was speaker at the dinner.

Those attending were Drs. and Mesdames R. O. Nye, J. R. Friedline, C. M. Grubb, all of Sarasota; C. E. Stone, Pennyon, N. Y.; Robert E. Holm, Silver Spring, Md.; J. H. Odgers, DeWitt, Iowa; H. E. Smith, Washington, D. C.; Dr. A. J. DeFosset, Clearwater; Dr. M. Rolighed, Edon Valley, Minn.

Drs. and Mesdames George L. Freese, Toledo, Ohio; C. E. Shipman, Tiffin, Ohio; Dr. N. D. Backus, Elyria, Ohio; Drs. and Mesdames J. H. Lenfestey, Lyons, Ohio; W. W. Hyde, Wellington, Ohio; R. Harvey, Montpelier, Ohio; C. L.

In the front row (kneeling) is the committee which arranged for this affair. They are (left to right) Drs. J. F. Lenfestey, A. J. DeFosset, and H. H. Fairbank; immediately to their left is Mrs. C. E. Shipman, Tiffin, Ohio, who acted as secretary.

Murphy, Buda, Ill.; Dr. W. A. Myers, Winona, Ill.; Dr. and Mrs. L. A. Ruff, Marshall, Mich.

Drs. and Mesdames N. D. Bailey, Mears, Mich.; William Hansen, Greenville, Mich.; E. E. Hamann, Grand Marais, Mich.; H. H. Ladson, Rockville, Md.; H. L. Tate, South Bend, Ind.; J. V. Bayles, Pennville, Ind.; S. E. Gaynor, Logansport, Ind.; George Gillie, Fort Wayne, Ind.

Dr. and Mrs. Fairbank, Col. and Mrs. E. G. Kelsheimer, Col. and Mrs. C. E. Cook, Mrs. R. E. Brookbank, all of Bradenton; Miss Helen Rowe, Unadilla, N. Y.; Mrs. H. E. Bryan, Angola, Ind.; and Frank Crawford, Grafton, Ohio.

s/A. J. DEFOSSET.

Georgia

Veterinary Practice Law Improved.—On Feb. 13, 1950, Governor Herman Talmadge signed amendments to the veterinary practice law that had been on the statutes for forty-two years unchanged. The law, which established a board of examiners, was maneuvered through the general assembly by former State Veterinarian Bahnsen in 1908. Weak as were its provisions, at least it gave legal status to the small veterinary profession and served as a measure to be improved at the opportune time. The state's notable achievements of conquering bovine tuberculosis, piroplasmosis, and brucellosis did not seem to impress successive legislatures as much as the new veterinary college, the growing livestock industry, the increased number of organized practitioners, and the publication of a veterinary journal. The influence of these combined was able to bring about a revision under which candidates for license to prac-

tice veterinary medicine are required to pass an examination on the subjects in a standard curriculum. The *Georgia Veterinarian*, spokesman of the state association, regards the revision praiseworthy and assuredly encouraging.

Illinois

Chicago Association.—Members of the Chicago Veterinary Medical Association met on March 14 in the Palmer House to hear Dr. Hal Stanton discuss "Canine Pseudocyesis" and to see the film "Physiology of the Normal Menstrual Cycle."

s/ROBERT C. GLOVER, *Secretary.*

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Eastern Association.—On March 8, members of the Eastern Illinois Veterinary Medical Association met in the Hotel Tilden Hall, Champaign, to hear Dr. W. S. Gochenour discuss "Some Newer Developments in the Field of Veterinary Biological Products."

s/PAUL D. BEAMER, *Secretary.*

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Meeting of Livestock Loss Prevention Board.—On Feb. 14-15, 1950, the annual meeting of the National Livestock Loss Prevention Board was held at the LaSalle Hotel, Chicago. Committee reports indicated that much progress has been made toward livestock loss prevention, and concerted plans were made for further work. One of the outstanding facts was the apparent improvement in coöperation between the different livestock interests—veterinarians, humane organizations, railroads, yard companies realize their dependence on each other in promoting a worthwhile and necessary task.

s/W. E. LOGAN.

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Bull of the Century Dies.—Netherhall Swanky Dan, 15-year-old aristocrat of the Ayrshire's, died of "a stroke" March 14 at the luxurious farm of the Curtiss Candy Company near Cary, while the president of the company, the manager of the farm, and several veterinarians kept watch at his deathbed. It is reported that his skeleton will become a permanent exhibit of the Smithsonian Institute in Washington, D.C., and his hide will be fashioned over a frame at the University of Illinois for agricultural students to study. Swanky Dan won 54 championships and sired more than 1,000 calves of the kind that make bulls famous.

Indiana

Michiana Association.—Forty-nine members attended a joint dinner meeting of the Michiana Veterinary Medical Association and its auxiliary at Club 66, Niles, Mich., on March, 1950, in honor of Dr. W. T. Graham of Niles. Dr. Graham was praised for his many years of devotion to the profession and to his community, and was presented with an honorary life membership to the Michiana group. The presentation was made by Dr. Frank Booth, Elkhart, on behalf of the association. Mrs. Graham was also honored and received an orchid corsage and a bouquet of lovely talisman roses.

Dr. James E. Carver, president, Michigan City, introduced the Reverend Robert Hall, pastor of the First Congregational Church of Michigan City, who spoke on "The Values of a Discerning Mind."

s/R. W. WORLEY, *Secretary.*

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Northeastern Association.—The Northeastern Indiana Veterinary Medical Association met in the Van Orman Hotel, Fort Wayne, March 14, to hear Mr. W. Soldner, Central Soya Products, Decatur, discuss nutrition.

s/JOHN L. KIXMILLER, *Resident Secretary.*

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Northwestern Association.—The Northwestern Indiana Veterinary Medical Association met in Remington at George Anstett's House of Good Food on Feb. 23. Mr. G. E. Zorini, Indianapolis, and Mr. Carl Nelson, Phillips Petroleum Co., Monticello, showed the film "The other Side of the Fence." Officers elected were Drs. Sherman Byrd, Rensselear, president; Chas. Lindborg, Monticello, vice-president; and M. D. Neuhauser, Lafayette, secretary-treasurer. Dr. and Mrs. L. E. Andres were hosts.

s/L. E. ANDRES.

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Sixth District Association.—On March 1, the Sixth District Veterinary Medical Association met in the Legion Hall in Lebanon. Dr. J. F. Bullard, Lafayette, discussed "Large Animal Practice" and Dr. H. D. Cain, Carmel, "Small Animal Practice." The rest of the evening was spent in a round table discussion of current practice problems. Dr. and Mrs. F. R. Lockridge, Mercer, Wis., were out of state guests at the meeting. Dr. and Mrs. R. W. Hardin, were hosts.

s/JOHN L. KIXMILLER, *Resident Secretary.*

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Southwestern Association.—Twenty-five veterinarians attended the meeting of the Southwestern Indiana Veterinary Medical Association at the Emmerson Hotel, Princeton, March 17. Mr. Heil, nutritionist with Meade-Johnson, Evansville, was the speaker of the evening. The usual spring problems in veterinary practice were also discussed.

Officers of this association are Dr. Olem Pumphrey, Fort Branch, president; and Dr. Joe Lowe, Mount Vernon, secretary.

s/JOHN L. KIXMILLER, *Secretary.*

Kansas

Dr. Vetter Joins Staff at Manhattan.—Dr. Roland F. Vetter (CORN '45), formerly of Summit, N. J., has been appointed assistant professor of surgery and medicine at Kansas State College. Dr. Vetter, who has specialized in small animal clinical medicine since 1945, will teach small animal clinics and medicine, phar-

macology, and materia medica. A veteran of World War II, Dr. Vetter is a member of Alpha Psi social fraternity, the New Jersey Veterinary Medical Association, and the AVMA.

s/E. E. LEASURE, *Dean.*

Massachusetts

State Association.—The regular monthly meeting of the Massachusetts Veterinary Association was held Feb. 15, 1950, at the Hotel Statler, Boston. After the dinner, President J. J. Murphy introduced Dr. R. R. Birch, professor emeritus of veterinary research, Cornell University, Ithaca, N. Y., who spoke on brucellosis. He presented the subject from a practitioner's viewpoint and members participated in a question and answer discussion following the presentation.

During the business session, Dr. Marvin Rothman (UP '48), Boston, was elected to membership.

s/C. LAWRENCE BLAKELY, *Secretary.*

Minnesota

Twin City Society.—The Twin City Veterinary Medical Society met on Feb. 16, 1950, at the University of Minnesota, St. Paul. Dr. Wesley Spink, M.D., Medical School, University of Minnesota, spoke on "Newer Antibiotics and their Use in Medicine." There were 50 veterinarians in attendance.

s/B. S. POMEROY, *Secretary.*

Missouri

Kansas City Association.—According to Secretary Curts' announcement, Dr. A. H. Quin (Ab for short), popular scrivener of the Jen-Sal Laboratories, acted as toastmaster at the annual dinner-dance of the Kansas City Veterinary Medical Association at the Ad Club on March 20. "Pop" Haines, celebrated postprandial tycoon of the Board of Trade, unloaded a stockpile of rib splitters on his "useless inventions." Bands of America (*in absentia*) provided music for the dance. Everyone went home to mamma at 12 m.

s/K. M. CURTS, *Secretary.*

New York

Committee on Publications.—The Committee on Publications of the New York State Veterinary Medical Society met in Willard Straight Hall on Jan. 6, 1950. Members present were Miss Joan Halat, Drs. W. S. Stone, J. M. Murphy, W. L. Weitz, and C. R. Schroeder.

s/C. R. SCHROEDER, *Chairman.*

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Rickettsialpox—A newly recognized, nonfatal disease, named rickettsialpox by the public health service of New York City, has been occurring in Queens and three other borroughs since 1946. It is transmitted to man by the mouse mite, *Allodermanyssus sanguineous.* The specific organism isolated is *Rickettsia akari.* Up to the end of 1949, 150 cases were reported. Chills, fever, headache, backache, sweats, muscular discomfort, weakness, and pimples at the sites of the mite bites (which may occur on any part of the body) make up a picture that has caused physicians to suspect chickenpox, smallpox, typhus, typhoid, and Rocky Mountain spotted fever. The disease is of veterinary interest as another infection transmitted to man by animals. Those interested in details will find them in the *Journal of the American Medical Association,* Dec. 12, 1949, pp. 1119-1122.

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—Acme Photo

Walsing Winning Trick of Edgarstoune, Scottish Terrier, born in England and purchased for $7,500 by Mrs. John G. Winant, wife of the late ambassador to England, won best-in-show award at the seventy-fourth annual Westminster Kennel Club show in New York in February. Over 2,500 selected canine purebreds were entered in the show.

Ohio

State Association.—The sixty-sixth annual meeting of the Ohio State Veterinary Medical Association was held in the Deshler-Wallick Hotel, Columbus, on Jan. 4-6, 1950, with 396 veterinarians in attendance.

Speakers in the small animal session were Dr. D. E. Rolf, M.D., chief, Department of Ophthalmology, Glenville Hospital, Cleveland, "Recent Advances in Surgery of the Eye"; Dr. A. C. Secord, Toronto, Ont., "Bone Grafting"; and Drs. C. C. Wagner (chairman); J. E. Jensen, Cleveland; L. E. Green, Akron; A. R. Theobald, Cincinnati; L. K. Firth, Canton; and A. C. Secord, who participated in a "Panel Discussion on Small Animal Practice.

The morning session on January 5 was devoted to discussions of bovine problems. Dr. G. W. Lies, Fort Recovery, spoke on "Feeder Cattle Problems." Dr. D. E. Bartlett, Division of Veterinary Medicine, University of Minnesota, St. Paul, discussed "Venereally Transmitted Reproductive Diseases of the Bovine Animal" (with illustrations). President-Elect

Coffee, La Center, Ky., showed motion pictures of problems encountered in general practice, spotlighting bovine stomatitis. A different trend in the program was Dr. J. F. Bullard's discussion (with graphic illustrations) of "Surgical Procedures in Swine." Dr. Bullard is in the Department of Veterinary Science, Purdue University, West Lafayette, Ind.

The following speakers and subjects were listed for the afternoon session: Dr. V. L. Tharp, director of Veterinary Clinics, The Ohio State University: "Bovine Traumatic Gastritis" (with illustrations). Dr. L. W. Price, Division of Animal Industry, Columbus: "Observations in Working with Foot-and-Mouth Disease." Dr. A. G. Madden, Jr., Madeira, showed a film on public relations. Dr. E. D. Martin, Department of Natural Resources, Columbus: "Wildlife in Ohio." Dr. J. H. Drayer, Columbus Department of Health: "Environmental Sanitation and the Veterinarian." Dr. W. R. Krill, dean, College of Veterinary Medicine, The Ohio State University: "The Present Status of Poultry Diagnostic Work in Ohio." Dr. C. A. Pleuger, Cincinnati, showed motion pictures of his trip to the International Veterinary Congress. The ladies also saw this film which included pictures of various scenes throughout Europe and Great Britain.

On January 6, Dr. Damon Catron, Department of Animal Husbandry, Iowa State College, Ames, discussed "Animal Protein Factor in Swine Nutrition." "The Current Status of Nonviable Hog Cholera Vaccines" (with illustrations) was the subject presented by Dr. A. H. Quin, Professional Service Division, Jensen-Salsbery Laboratories, Kansas City, Mo. Dr. B. J. Killham, School of Veterinary Medicine, Michigan State College, East Lansing, spoke on "The Use of M Vaccine—Results of Field Trials in Michigan," and Dr. B. H. Edgington, Department of Veterinary Science, Reynoldsburg, gave a progress report on its use in Ohio and discussed "The Technique of the Milk Test (Ring Test) for Detecting Bovine Brucellosis." Dr. H. G. Geyer, chief, Division of Animal Industry, Department of Agriculture, Columbus, told of "New Rulings of the Ohio Brucellosis Program."

The following officers were elected: Drs. H. K. Bailey, Wilmington, president; S. W. Stout, Hamilton, president-elect; J. T. Burriss, Columbus, vice-president; J. H. Helwig, Columbus, treasurer; F. J. Kingma, Columbus, secretary; W. H. Pavey, Xenia, Executive Board member; C. D. Diesem, Columbus, was recommended for resident secretary.

s/F. J. KINGMA, *Secretary.*

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Conference to Stress Nutrition of Beef Cattle.—The annual conference for veterinarians, given by the College of Veterinary Medicine, The Ohio State University, will be held June 14-16, 1950. An interesting program is assured and all veterinarians are welcome. One day will be devoted to nutrition of beef cattle and the material presented will be of such nature that it can be applied by the veterinarian in his daily practice.

Programs will be mailed as soon as available, and anyone, who has not been on the mailing list, may request a program from Dr. R. E. Rebrassier, The Ohio State University, Columbus, chairman of the conference.

s/R. E. REBRASSIER, *Chairman.*

Pennsylvania

New Brucellosis Program.—An all-out campaign for the control and eradication of brucellosis in Pennsylvania has been instituted. The accepted program embodies free vaccination, with vaccine and veterinary services paid by the state, for all calves between the ages of 6 and 8 months. Under special permit, the same service is available for calves 8 to 10 months old; and for older animals, free vaccine, but not free services of veterinarians, will be supplied also under special permit.

Indemnity payments for reacting animals which are condemned and slaughtered will be continued even when the reacting animal is vaccinated at the age of 6 to 8 months, and is still a reactor eighteen months after vaccination.

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Keystone Association.—On March 22, the Keystone Veterinary Medical Association met at the University of Pennsylvania School of Veterinary Medicine to hear Drs. J. B. McCahon, Downington, and A. V. Bartenslager, Stewartstown, discuss "Large Animal Practice."

s/RAYMOND C. SNYDER, *Secretary.*

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State Poultry Federation.—The production of over 3 billion eggs in 1947 placed Pennsylvania third from the top of the poultry states. It became an exporter instead of an importer of eggs and poultry. To "hold the line," it was realized that a closer coöperation between poultrymen and veterinarians must be established. A step toward that end was the founding of the Pennsylvania State Poultry Federation which is dividing the state into districts for organizing the collaboration.—*From Veterinary Extension, No.* 113.

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Mastics Patented.—Martin Laboratories was granted patent No. 2,498,374 on mastics on Feb. 21, 1950. Increased production is planned and as soon as possible, newly developed, automatic machinery will be installed in a new, especially constructed building.

Tennessee

Eastern Society.—The Eastern Tennessee Veterinary Medical Society met on March 11, in Knoxville, with 25 veterinarians and their wives in attendance. Mr. William P. Tyrell, Animal Husbandry Department, University of Tennessee, gave an interesting discussion on the

outlook for the beef cattle, hog, and sheep industry in the state and suggested many requirements for veterinary activity.

s/DENNIS COUGHLIN, *Secretary.*

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Kiwanis Sponsor Veterinary Scholarship.—The Kiwanis Club at Wartburg is sponsoring a scholarship to be financed from a "pig chain" for an FFA boy who wishes to become a veterinarian.

Washington

The Veterinarian and the Fur Farmer.—The following comment appeared in an editorial by Edward R. Ridley, in the *Black Fox and Modern Mink Breeder* for February, 1950: "At the first sign of any disease, immediately consult a competent veterinarian. It's much easier to prevent diseases of furbearing animals than to cure them after sickness spreads throughout the ranch.—E.R.R."

Such comments contribute to the successful relations between the veterinarian and the fur farmer.

s/JOHN R. GORHAM.

Wisconsin

Milwaukee Association.—The March 21 meeting of the Milwaukee Veterinary Medical Association was held in the lecture hall of the Wisconsin Humane Society. Dr. Heinz Siedentopf, laboratory director of Fromm Laboratories, Inc., discussed "Infectious Canine Hepatitis."

s/K. G. NICHOLSON, *Secretary.*

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Brucellosis Indemnity Cut.—Brucellosis indemnity was cut in half in those Wisconsin areas which are not on a compulsory brucellosis control program as of Jan. 1, 1950. Full indemnity payments are maintained in those areas which are operating on an area control program.

Wyoming

Personal.—Dr. J. H. McNamara (COLO '44), formerly of Bear River City, Utah, has entered a progressive partnership with Dr. James L. Felix in Casper. The practice is mixed and includes a hospital for both large and small animals.

FOREIGN NEWS

Australia

AVMA Represented at National Meeting.—Dr. James D. Steel of the Veterinary Faculty of the University of Sydney will represent the American Veterinary Medical Association at the twenty-seventh annual general meeting of the Australian Veterinary Association to be held in Adelaide, May 22-26, 1950. Dr. Steel visited the United States in 1947, at which time he joined the AVMA; the Association was recently invited to designate an official representative for the Australia meeting and Dr. Steel consented to act.

Colombia

Veterinary Committee of the FAO.—At a meeting of the Food and Agricultural Organization of the United Nations at Bogata in July, 1949, the subcommittee on veterinary medicine was directed to provide information on the number of veterinarians in each country and on the manner of their employment: state employed, private practitioners, teachers, laboratorians, etc.

Denmark

Danish Veterinarians in Artificial Insemination Program.—The Danish Veterinary Association has agreed that veterinarians, whether practicing or permanently employed, can be appointed to do the entire artificial insemination job or only parts of it and in this way coöperate with breeding technicians. The Livestock Association on its part has agreed to leave all cases of sterility and infertility for treatment by veterinarians.

It is hoped that this will provide a basis for frictionless coöperation between the breeding committees and the veterinarians. However, since the final agreement involved compromise on both sides, it seems likely that some may be satisfied while others may think that too many concessions have been made.

Nevertheless, the Committee on Insemination of the Danish Veterinary Association believes that, if all of its members will follow the general procedure outlined in this agreement, the Danish veterinarians will soon be found occupying the place within this field which their education, experience, and knowledge require them to be.

England

Progress in Calfhood Vaccination.—Over 1¼ million heifer calves and maiden heifers in Britain have been vaccinated with strain 19 under a government-sponsored program started five years ago, the Ministry of Agriculture and Fisheries has reported.

The government report, published in part in *The Veterinary Record* (Jan. 28, 1950), declares that "there is evidence that the scheme is having a beneficial effect, and that vaccination is contributing to the increase in milk production and to improvement in fertility."

Formerly, vaccination was restricted to herds "subject to official testing or routine veterinary inspection," but the Ministry said it would extend the program to all herds, effective April 1, 1950.

Effective the same date, the charge per vaccination was increased. The program was launched under a government subsidy that covered a large part of the costs, but farmers will now be asked to pay a bigger share. The new rate is 2 shillings (about 28 cents) per calf.

False Tooth in Calf Bites into Cattle Dealer's Future.—Jurists in Britain made it strikingly clear that it doesn't pay to try to plant a calf's tooth in a cow's mouth.

After viewing 53 exhibits that included cattle jaw bones, model sets of bovine teeth, and x-ray prints, magistrates decided that Douglas Frederick Clay, cattle dealer of Denmead, was guilty of trying to obtain money falsely by marketing older cows as cow heifers. Clay was indicted, fined $560, and sentenced to a year in prison on each of five charges for replacing a cow's normal tooth with a calf tooth prior to the sale of 9 cattle, according to reports in *The Veterinary Record* (Dec. 3, 1949, and Jan. 28, 1950).

Dr. F. T. Boyle examined one of the jaws concerned and found a cavity three times as large as the baby tooth. It was obvious, he said, that the work on the jaw had been done "by some human hand."

Germany

A Forgotten War Casualty.—The sacrifice of the research institutes founded to continue and to commemorate the brilliant work of Paul Ehrlich (1854-1915) which survived, in a fashion, despite the period of revolution and destruction of buildings, will have to be abolished unless outside financial aid is received. The foundation funds have been wiped out by deficits and currency reform. These institutions were the birthplace of modern chemotherapy among which is famed 606 and other arsphenamines. Noted scientists have joined to solicit funds, not only to restore the physical equipment but also to perpetuate the spirit Paul Ehrlich put into them. Among them are Nobel prize winners of six countries and two married daughters of Professor Ehrlich who live in New York City. Ehrlich's dream in the nineteenth century was the "wonder" drugs of 1950. His first discovery was the acridin dye cure of animal trypanosomiasis (surra) in 1907; his next was salvarsan (606) in 1910 for the cure of human syphilis, a historic victory for animal experimentation. Those interested may send contribution to Paul-Ehrlich-Institut, Frankfurt-am-Main, Süd 10, American Zone, Germany.

Japan

National Association.—The first national meeting of veterinarians under the auspices of the Japanese Veterinary Medical Association was held in Osaka City on March 26-29, 1950. Among the speakers were Dr. Donald L. Bush, Chugoku Region; Major Hans J. Magens, Kinki Region; Dr. Charles E. Pegg, Kanto Region; Col. Marion W. Scothorn; Dr. Charles H. Stengel, Tokai-Hokuriku Region; Dr. C. T. Beechwood; Major Karl H. Willers, Civil Affairs Section, General Headquarters; Dr. Walter J. Barngrover, Hokkaido Region; and Dr. Harold F. Luke, Kyushu.

The program was divided into section meetings and symposiums as follows: sections on clinical medicine, public health, education, biological products, code of ethics; and symposiums on veterinary public health and modern chemotherapy.

S/TORAI SHIMAMURA, *President.*

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Bovine Influenza Epizoötic.—Nearly 150,000 cattle were stricken with bovine influenza from August to November, 1949, General MacArthur's headquarters has reported.

Mexico

Foot-and-Mouth Disease Vaccination.—During the first eight months of 1949, there were 22,222,800 cattle vaccinated against foot-and-mouth disease, and 7,347 were eradicated and buried. The production laboratories' output was 22,200,000 doses of vaccine. The records published in *The Cattleman* were as follows:

	Vaccine Produced	Animals Vaccinated	Animals Killed
January	2,500,000	1,775,186	4,034
February	2,000,000	1,738,360	2,205
March	2,300,000	2,404,970	787
April	2,100,000	2,830,514	198
May	2,400,000	3,664,943	2
June	5,200,000	3,336,429	103
July	2,500,000	2,970,056	18
August	5,200,000	3,502,342	0
	22,200,000	22,222,800	7,347

The new vaccine laboratory opened September 3, at Palo Alto, has a capacity of more than 100,000 doses a day.

South Africa

Jockey Club's Library Service.—The Jockey Club of South Africa subscribes to 16 journals of veterinary medicine which are loaned to veterinarians on request. Among them are the *Journal of the American Veterinary Medical Association* and the *American Journal of Veterinary Research.*

Sweden

Butter Sans Churning.—The Stockholm Separator Company claims to have perfected the German machine that reduces milk to butter without churning. The discovery of this machine by the Quartermaster Corps of the U.S. Army in its post-war prowlings was announced in 1946 when one of the "sensations" was sent to the University of Illinois (JOURNAL, Jan., 1947:13) for trial. But little, if anything, has been heard about the innovation since then. The machine, in one operation, was said to reduce the density of milk and transmute it into butter that is harder and closer in texture than churned cream. The early reports appear to have been exaggerations, as trials in Britain, Australia, and New Zealand appeared to show that the German contraption had not been perfected. Nothing was heard (in our circle) about the machine that was secretly spirited to the state university in order to forestall mass production prematurely. Having published an illustrated scoop

on pour-in-the-milk-and-take-out-the-butter machines three years ago, the JOURNAL feels obligated to follow the development of this remarkable invention. The *status quo* is that the company has improved the German milk-to-butter machine but is holding mass production in abeyance pending proof of its merits by dairymen.

VETERINARY MILITARY SERVICE

Retirement Benefits to Reserve Officers Under Public Law 810

Some veterinarians who are members of the Reserve Corps may not be familiar with the retirement benefits to which they are entitled. Public Law 810 passed by the Eightieth Congress states that any reserve officer who has performed satisfactory federal service for an aggregate of twenty years, the last eight of which have been as a member of a reserve component, is eligible for retirement pay on reaching the age of 60. The amount of retirement pay is proportionate to the highest rank satisfactorily held and to the relative number of years of active and inactive service.

EXAMPLES

For example, if a veterinarian served as a reserve officer for ten years before Jan. 1, 1940, he would thus have accumulated 10 times 50 or 500 "days" during that time. If called to active duty on Jan. 1, 1940, and served five years until Jan. 1, 1946, at which time he was released from active duty as a lieutenant colonel but remained in the reserve corps he would have accumulated 5 times 360 or 1,800 points. By staying in the reserve component from Jan. 1, 1946 until July 1, 1949, he accumulates 3½ times 50 or 175 points during that period. He now has eighteen and one-half years of satisfactory service and needs only one and one-half years more to qualify for retirement pay benefits.

To acquire the additional one and one-half years service needed, he must be credited with the 50 points a year. If he does this by remaining in the active reserve, he will receive an additional 75 points (1½ times 50) which will give him a total of 2,550 points or days of service. At the age of 60, he will be entitled to receive 2.5 per cent of $527.25, the base pay of a lieutenant colonel with twenty years service, times 7.1 (2,550 divided by 360), or $93.57 monthly, for the remainder of his life. Should he fail to qualify as active reserve by not making the necessary points a year and subsequently be discharged for physical disability, he will forfeit the equivalent of an annuity which has almost been completed.

Some younger men, unknowingly, may also be forfeiting a similar annuity. Suppose a veterinarian without previous reserve or active duty service spent four years on active duty during World War II. After being released from active duty, he did not retain his reserve commission but, due to his youth, he still has time to serve the sixteen additional years required of him. He is probably young enough to serve the required sixteen years and revert to an inactive status before the age of 60. He may retire with the rank of lieutenant colonel, even though he has not served on extended active duty during that time, and be entitled to $81.61 monthly for the remainder of his life. Should he choose to serve for additional periods of extended active duty, the amount to which he would be entitled would, of course, be greater.

DETAILS OF PUBLIC LAW 810

The term "Federal Service" includes all active federal service in the U. S. Army, Air Force, federally recognized National Guard prior to 1933, Navy, Marine Corps, Coast Guard, and all service in their reserve components prior to July 1, 1949. Each year of satisfactory service prior to that time is considered to be a year of satisfactory federal service, provided that this service was not performed in certain inactive components which are specifically excluded. The law does state that no one who was a member of a reserve component on or before Aug. 15, 1945 shall be eligible for retirement benefits under its provisions, unless he has performed active federal service during any portion of either of two periods—April 6, 1917 to Nov. 11, 1918 and Sept. 9, 1940 to Dec. 31, 1946.

After July 1, 1949, a year of satisfactory service as a member of a reserve component, while not on active duty, consists of any year during which a minimum of 50 points has accumulated on the following basis: (1) 15 points, automatically granted for membership in the active reserve; (2) 1 point for each day of active federal service during that year; (3) 1 point for each drill, meeting, instruction period, and for each day of training duty, with or without pay; and (4) credit points for successful completion of correspondence courses.

The retirement pay granted under this law equals the sum derived by multiplying 2.5 per cent of the base and longevity pay which the recipient would receive if he were serving on active duty, at the time he is granted such, in the highest temporary or permanent grade which he held satisfactorily during his entire period of service, by a certain factor. This factor consists of the number of years and any fraction thereof (on the basis of 360 days per year) composing the sum of the following: (1) all periods of active federal service; (2) 50 days for each year of federal service, other than active federal service, performed as a member of a reserve component prior to July 1, 1949; and (3) 1 day for each of the 50 points required for each year of satisfactory service performed subsequent to July 1, 1949. Not more than sixty days may actually be credited, on this

Based on a release from the Department of the Army, Washington, D.C., and information contained in an article in the *Journal of the American Medical Association*, March 4, 1950.

basis, per year. Anyone who has not attained the age of 60 but is eligible in all other respects to receive retirement pay under the provisions of this law may be transferred to the inactive status.—*C. D. Van Houweling, D.V.M., Director, Professional Relations, AVMA.*

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Top Veterinary Officers Attend Fifth Army Conference.—Brig. Gen. J. A. McCallam, chief of the Veterinary Division, Army Surgeon General's Office, and two of his staff officers presented papers at a conference of all key veterinary inspectors of the Fifth Army Area in Chicago, Ill., on March 20-24. Accompanying General McCallam were Col. George L. Caldwell, V.C., assistant chief of the Veterinary Division, and Lieut. Col. Russell McNellis, V.C., chief, Meat and Dairy Hygiene Branch. General McCallam discussed "The Veterinary Service of the Armed Forces"; Colonel Caldwell, "Personnel Affairs"; and Colonel McNellis, "Policies and Observations in the Operation of the Meat and Dairy Hygiene Branch, Veterinary Division, Surgeon General's Office."

The conference was called by Col. Jack Fuller, V.C., Fifth Army Veterinary Area, to standardize inspection procedures and bring inspectors up to date on the latest developments in the food-inspection field.

Other members of the Veterinary Corps who participated in the program were Col. E. W. Young, Col. C. F. Kearney, Lieut. Col. J. H. Rust, Capt. E. W. Grogan, Major E. S. Watkins, Major R. J. Miller, Capt. W. G. Brooks, Major L. V. Fry, Lieut. Col. D. C. Kelley, Lieut. Col. P. R. Carter, Major C. H. Snider, Major B. B. Loveland, Capt. J. E. Reid, Capt. A. A. Taylor, Lieut. Col. J. D. Manges, Lieut. Col. H. R. Lancaster.

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Major Miller Inspects Medical Service in Alaska.—Major Robert R. Miller, deputy chief, Veterinary Division, office of The Surgeon General, headquarters U. S. Air Force, recently accompanied Major General Armstrong, Surgeon general of the U. S. Air Force, on a ten-day tour of inspection of medical service activities in the Alaskan Air Command. Inspections were made at Anchorage, Fairbanks, Point Barrow, and Nome. Major Miller was initiated into the "Top of the World Club" while at Point Barrow, and is probably the first veterinary officer to land in the Arctic Circle and become a member of that association.

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Major Snodgrass Medical Observer for "Operation Prairie."—Major William B. Snodgrass (KSC '33) USAF, V.C., acted as medical observer for the U. S. Air Force to "Operation Prairie," an army research and development project, "maneuverability of mobile hospital units under sub-Arctic conditions." Major Snodgrass, the base veterinarian at Rapid City Air Force Base, S. Dak., was with the operation at Shilo, Canada, during the last part of February. He observed all matters pertaining to medical, preventive medical, and veterinary medical materials in use during the operation, to determine their suitability for use in further maneuvers.

STATE BOARD EXAMINATIONS

Florida—The Florida State Board of Veterinary Examiners will hold an examination on June 19-21, 1950, at the Everglades Hotel, Miami, Fla. Further information may be obtained from C. Paul Vickers, P. O. box 1207, Tallahassee, Fla., secretary.

Idaho—The Idaho Department of Occupational Licenses has set June 5-6, 1950, as the dates for examination for veterinary licenses to practice in the state. Further information may be obtained from Dr. Arthur P. Schneider, Department of Agriculture, Boise, Idaho.

Iowa—The Iowa Veterinary Medical Examining Board will hold examinations for the licensing of veterinarians on June 12-13, 1950. Applicants are asked to be in the office of the Division of Animal Industry, State House, Des Moines, Iowa, not later than 8:00 a. m. on June 12. Anyone wishing to obtain further information should communicate with Dr. H. U. Garrett, chief, Division of Animal Industry, State House, Des Moines 19, Iowa.

Maryland—The State Board of Veterinary Medical Examiners will hold its next regular examination on Saturday, June 17, 1950, at the Medical and Chirurgical Faculty Hall, 1211 Cathedral St., Baltimore, Md., starting at 10:00 a.m. Candidates must be graduates of colleges accredited by the AVMA, and must be citizens of the United States. Hulbert Young, Liberty Road, Owings Mills, Md., R.D. 2, secretary.

Massachusetts—The Massachusetts Board of Registration in Veterinary Medicine will hold examinations for registration on June 27, 28, and 29, 1950, at Amherst. The latest date for filing applications is June 13. Address inquiries to Dr. Gerry B. Schnelle, Secretary, Board of Registration in Veterinary Medicine, Room 33, State House, Boston 33, Mass.

Missouri—The Missouri State Board of Veterinary Medical Examiners will hold its annual meeting at the School of Veterinary Medicine, University of Missouri, Columbia, on June 14-15, 1950. Further information and applications may be obtained from Dr. H. E. Curry, Veterinary Examining Board, P.O. box 630, Jefferson City, Mo.

Pennsylvania—The Pennsylvania State Board of Veterinary Medical Examiners will hold examinations for registration to practice veterinary medicine in Pennsylvania on June 15-16, 1950, in Philadelphia. Interested can-

didates are requested to contact the office as soon as possible for further information. The proposed internship program will not be in effect during the present year. Mrs. Marion Hacker, Bureau of Professional Licensing, State Board of Veterinary Medical Examiners, Education Building, Harrisburg, Pa.

Utah—The Utah Veterinary Medical Examining Board will meet Monday and Tuesday, June 19 and 20, 1950, at the State Capitol Building, Salt Lake City, for the purpose of examining applicants to practice veterinary medicine in Utah. A fee of $15.00 must be filed with each application to take the examination. Application blanks may be obtained from the Department of Registration, Mr. Frank Lees, State Capitol Building, Salt Lake City, Utah.

BIRTHS

Dr. (COLO '46) and Mrs. Geo. W. Moreland, Pecos, Texas, announce the birth of a daughter, Marcelyn Ruth, on Nov. 13, 1949.

Dr. (MSC '49) and Mrs. Max E. Hibbard, Kalamazoo, Mich., announce the birth of twin sons, Jan Christian and Jon Christopher, on Dec. 2, 1949.

To Dr. (OSU '45) and Mrs. R. F. Portman, Lafayette, Ind., a son on Jan. 6, 1950.

To Dr. (ISC '43) and Mrs. Philip E. Smith, Clarion, Iowa, a daughter, Deborah Ann, on Jan. 25, 1950.

Dr. (ISC '39) and Mrs. Stanley A. Lovik, Des Moines, Iowa, announce the birth of Thomas Allen on Jan. 28, 1950.

Dr. (WASH '41) and Mrs. Dallen H. Jones, Roseburg, Ore., announce the birth of a son, Randal Dallen, on Feb. 1, 1950.

Dr. (COLO '46) and Mrs. O. R. Adams, Fort Collins, Colo., announce the birth of a daughter, Lynne Louise, on Feb. 4, 1950.

Dr. (CORN '38) and Mrs. Harry J. Fallon, Huntington, W. Va., presented Aline and Denise Fallon with a playmate named Ronald Kenneth on Feb. 14, 1950.

Dr. (KSC '46) and Mrs. W. J. Winchester, Rosemead, Calif., announce the birth of a son, William Daniel, on Feb. 27, 1950.

Dr. (COLO '49) and Mrs. D. H. Marioni, Turlock, Calif., announce the birth of a son, William H., on Feb. 28, 1950.

Dr. (API '44) and Mrs. Harold Wilford Nance, Lawrenceburg, Tenn., announce the arrival of Freda Rebecca on March 3, 1950.

DEATHS

L. P. Brewster (CVC '05), 77, Vermillion, S. Dak., died Oct. 18, 1949, of a heart attack. Dr. Brewster retired in 1945 after serving Vermillion for forty years. He had also served as a member of the local school board.

Earl G. Case (ONT '09), 66, Savannah, Ga., died on Nov. 16, 1949, of a cerebral hemorrhage. Dr. Case is survived by his widow, one daughter, and three sons, two of whom are veterinarians—Harlan R. of San Diego, Calif., and Francis H. of Savannah, Ga. Dr. Case was a member of the Georgia Veterinary Medical Association.

★**MacFarland Campbell** (KCVC '11), 59, McCook, Neb., died Dec. 29, 1949, following a long illness. In addition to his duties as a veterinarian, Dr. Campbell served as mayor of McCook from 1932 to 1935 and actively supported the organization of soil conservation and irrigation groups in his state. Dr. Campbell was a member of the Nebraska State Veterinary Medical Association and of the AVMA.

E. N. Chute (CHI '92), 77, Fairmont, Minn., died on Dec. 12, 1949. Dr. Chute, who had practiced at Medelia before moving to Fairmont, retired in 1943.

George A. Clark (HAR '95), 79, South Sutton, N. H., died on Nov. 5, 1949. Dr. Clark practiced in Franklin, N. H., and Marblehead, Mass., before locating in South Sutton in 1935. He was a veteran of World War I.

★**L. Sherman Cleaves** (MC K '95), 84, Bar Harbor, Maine, died Jan. 20, 1950. Dr. Cleaves had been a member of the AVMA for twenty-six years.

★**R. F. Dean** (CVC '06), 67, North Salem, Ind., died Nov. 5, 1949. Dr. Dean was a member of the Sixth Indiana District and the Indiana State veterinary medical associations, and of the AVMA.

Edward A. Durner (NYSVC '05), 77, New York, N. Y., died Jan. 15, 1950. Dr. Durner was a member of the Veterinary Medical Association of New York City and the New York State Veterinary Medical Society. He had been a member of the AVMA.

★**Hyram J. Frederick** (ISC '05), 78, Logan, Utah, died Feb. 3, 1950. Immediately upon receiving his D.V.M. degree, Dr. Frederick was appointed professor of veterinary science at Utah State Agricultural College where he served continuously until his retirement in 1939, except for six months leave of absence to study veterinary problems in Europe. He was a civic leader in his community, having served many years on the school board, and was active in his state association. He also was the dominating force behind the organization of the Intermountain Livestock Sanitary Association (now the Intermountain Veterinary Medical Association) and served as its first president.

Dr. Frederick was a member of the AVMA. He is survived by his widow, two daughters, and three sons.

Arthur J. Hammerstein (AMER '92), St. Louis, Mo., died Jan. 9, 1950.

C. E. Hanawalt (CVC '15), 59, Ashland, Ky., died suddenly Nov. 15, 1949, following a heart attack. Dr. Hanawalt operated the Ashland Pet Hospital in connection with his practice.

★**Arthur A. Hardin** (ISC '45), *26*, Little York, Ill., died Jan. *24*, 1950, of a heart attack. Dr. Hardin was admitted to the AVMA in 1945.

Rudolph H. Heyde (CVC '09), Waycross, Ga., died Dec. *25*, 1949. Dr. Heyde was a member of the Georgia Veterinary Medical Association. He is survived by his widow and one daughter.

★**Frank B. Jones** (KCVC '11), *62*, Topeka, Kan., died of a heart attack on Jan. *8*, 1950. After receiving his degree, Dr. Jones practiced in Kansas until 1917, when he entered the Bureau of Animal Industry, serving on the field force in several states. In July 1945, he was appointed assistant inspector in charge of the field force in Kansas, with headquarters in Topeka, in which capacity he served until his death. Dr. Jones was admitted to the AVMA in 1917.

He is survived by his widow.

★**Ed. P. Kleeman** (OSU '28), 45, St. Joseph, Mo., died Dec. *22*, 1949. Dr. Kleeman had been employed in field work for the Bureau of Animal Industry and was a member of the National Association of BAI Veterinarians and of the AVMA.

★**Louis Klotz** (NYSVC '20), *52*, Linden, N. J., died on Nov. 12, 1949, after a long illness. Dr. Klotz had served in the U. S. Bureau of Animal Industry with the Linden Board of Health. More recently, he operated the Linden Dog and Cat Hospital. Dr. Klotz was admitted to the AVMA in 1920.

George D. Little (MC K '05), 81, High River, Alberta, died on July 16, 1949. Dr. Little practiced in Janesville, Wis., until 1924 when he went to High River.

Edward A. Logan (KSC '09), St. Joseph, Mo., died Feb. 11, 1950. Dr. Logan had been employed by Anchor Serum Co. for several years.

★**George W. McBroom** (CVC '12), *62*, Atwater, Minn., died Oct. 18, 1949. Dr. McBroom had been a member of the AVMA for twenty-three years.

Herbert C. McNare (KCVC '11), Ainsworth, Neb., died recently.

★**Lloyd C. Merritt** (IND '18), 58, Sumter, S. Car., died on Dec. 12, 1949. Dr. Merritt was a member of the Southern States and South Carolina veterinary medical associations and of the AVMA.

B. W. Murphy (CVC '99), 73, St. Joseph, Mo., died Jan. 31, 1950. Dr. Murphy was formerly inspector in charge of the Kansas Bureau of Animal Industry.

I. W. Perry (CHI '17), Warren, Ill., died of a heart attack on Oct. 6, 1949.

Elmer J. Renter (CIN '10), *67*, Sedamsville, Ohio, died on Oct. 17, 1949, following a stroke. Dr. Renter retired as city veterinarian of Cincinnati several years ago and has been in business since then.

★**Glenn N. Richards** (COLO '42), 31, Osage, Iowa, died Oct. *23*, 1949. Dr. Richards was admitted to the AVMA in 1942.

★**John O. Riester** (IND '10), *60*, Salem, Ind., died Jan. 16, 1950, of a heart attack. Dr. Riester was supervising inspector of the brucellosis-control program of the Indiana State Livestock Sanitary Board from 1932 to 1944. He had practiced in Salem since his retirement from government work. Dr. Riester was admitted to the AVMA in 1940.

C. J. Robinson (USCVS '18), Washington, D. C., died Nov. 17, 1949, after a long illness. Dr. Robinson's father, Dr. C. Barnwell Robinson, was the founder of the U. S. College of Veterinary Surgeons in 1894.

★**Paul F. Starch** (ISC '45), *26*, South Beloit, Wis., died on Feb. *28*, 1950, as the result of an auto accident. Dr. Starch, who had received the Dean Graham award for outstanding ability in handling animals, practiced with Dr. Krueger in Evansville, Wis., for three years after receiving his D.V.M. degree. In November, 1948, he started practice in South Beloit. Dr. Starch is survived by his widow, his parents, a brother, and two sisters. He was admitted to the AVMA in 1945.

L. C. Tasche (CVC '00), 79, Sheboygan, Wis., died Feb. 16, 1950, after a brief illness. Dr. Tasche, who had served Sheboygan for half a century, was Wisconsin's oldest veterinarian. He had served as sheriff from 1928 to 1930, and was humane officer of the county for twelve years. He had been a member of the AVMA. He is survived by his widow and a daughter.

★**Hugh J. Tingley** (ONT '23), 57, Winnipeg, Canada, died as the result of a heart attack on Feb. 3, 1950. Dr. Tingley began practice in Grenfell, Sask., and then came to Winnipeg where he built a small animal hospital. Dr. W. R. Giesbrecht joined him in partnership in 1945. Dr. Tingley was a member of the Manitoba Veterinary Association, serving as its president in 1946, and was also a member of the AVMA.

John Howard Turner (UP '04), Wellsboro, Pa., died Feb. 4, 1950. Dr. Turner had been a member of the AVMA.

Col. Fred C. Waters (OSU '12), *62*, San Francisco, Calif., died Jan. 6, 1950, at the Letterman General Hospital. Colonel Waters was commissioned a second lieutenant in the Veterinary Corps in July, 1917, and served until Jan. 31, 1946, when he was retired for physical disability. He had been a member of the AVMA.

Colonel Waters is survived by his widow and a son and daughter.

★**William C. Woodward**, M.D., L.I.M., Washington, D. C., former health officer of the District of Columbia, who initiated the program of tuberculosis eradication in the District, died Dec. *22*, 1949. Dr. John R. Mohler, former chief of the Bureau of Animal Industry, writes that Dr. Woodward was also influential in the bovine tuberculosis-eradication program in the United States. Dr. Woodward was elected to honorary membership in the AVMA in 1912.

★Indicates members of the AVMA.

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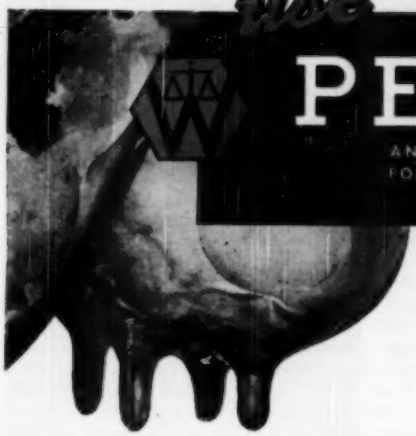
ANTIBIOTIC VEHICLE OF CHOICE FOR INTRAMAMMARY INFUSIONS



Successful penicillin therapy of bovine mastitis is often hampered by failure to provide *therapeutic* concentrations of the antibiotic in the infected quarter for *long enough* periods.

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An' Related Topics

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CAPITALIZING (continued)

13) *Personal Titles (Position, Rank).*—Being a part of the proper noun, the title of a person placed before his name begins with a capital letter, as in

Chief B. T. Simms
President C. P. Zepp., Sr.
Secretary R. C. Glover
Chairman C. C. Hastings,

but if placed after the name, the same title becomes a common noun and, therefore, is not capitalized, as in

W. A. Hagan, dean, New York State Veterinary College, recommended. . . .
W. A. Young, director, The Chicago Anti-Cruelty Society, suggested. . . .
Andrew MacNabb, principal, Ontario Veterinary College, predicts. . . .

Titles may be capitalized when referred to again in the text, *i.e.*, the President, the Dean, the Director.

Titles similar to the three foregoing examples are frequently capitalized erroneously in veterinary writings. Other words of the same class, among many others, are governor, ambassador, minister, professor, treasurer, executive secretary, judge, mayor, and the various grades of military and other personnel.

Exception to this rule is made in formal announcements (programs, catalogues) as in

B. T. Simms, Chief of the Bureau of Animal Industry, Washington, D.C.
C. P. Zepp, Sr. (New York City), President of the American Veterinary Medical Association, Chicago, Ill.
H. Preston Hoskins, Editor, *The North American Veterinarian*, Evanston, Ill.

14) *Periods of Time.*—Capitalize the days of the week, the months of the calendar year, stated eras (Stone Age, Middle Ages, Colonial days), days and periods set apart for observance (New Year's Day, Memorial Day, Lent, Labor Day).

Do not capitalize centuries; write, George Washington lived in the eighteenth century. The Crusades were waged in the eleventh, twelfth, and thirteenth centuries.

COMING MEETINGS

Notices of Coming Meetings must be received by 8th of month preceding date of issue

Eastern Iowa Veterinary Association. Annual clinic. Dairy Cattle Congress Hippodrome, Waterloo, Iowa, May 18, 1950. N. R. Waggoner, Olin, Iowa, secretary.

Texas, Third Annual Veterinary Conference. School of Veterinary Medicine, A. & M. College of Texas, College Station, June 8-9, 1950. R. D. Turk, School of Veterinary Medicine, A. & M. College of Texas, College Station, chairman.

Utah Veterinary Medical Association. Annual meeting. Cedar City, Utah, June 8-9, 1950. Edward A. Tugaw, 3015 S. State St., Salt Lake City, Utah, secretary.

Alabama Polytechnic Institute, twenty-sixth annual conference for veterinarians. Alabama Polytechnic Institute, Auburn, Ala., June 8-10, 1950. R. S. Sugg, School of Veterinary Medicine, Alabama Polytechnic Institute, Auburn, Ala., dean.

Idaho Veterinary Medical Association. Summer meeting. Shore Lodge, McCall, Idaho, June 12-13, 1950. Arthur P. Schneider, Room 108, State House, Boise, Idaho, secretary.

Oklahoma A. & M. College. Conference for veterinarians. Oklahoma A. & M. College, Stillwater, Okla., June 12-13, 1950. C. H. McElroy, dean.

Ohio, annual conference for veterinarians. The Ohio State University, Columbus, June 14-16, 1950. R. E. Rebrassier, College of Veterinary Medicine, The Ohio State University, Columbus, chairman.

Washington State College annual short course for veterinarians. College of Veterinary Medicine, State College of Washington, Pullman, Wash., June 14-16, 1950. R. E. Nichols, dean.

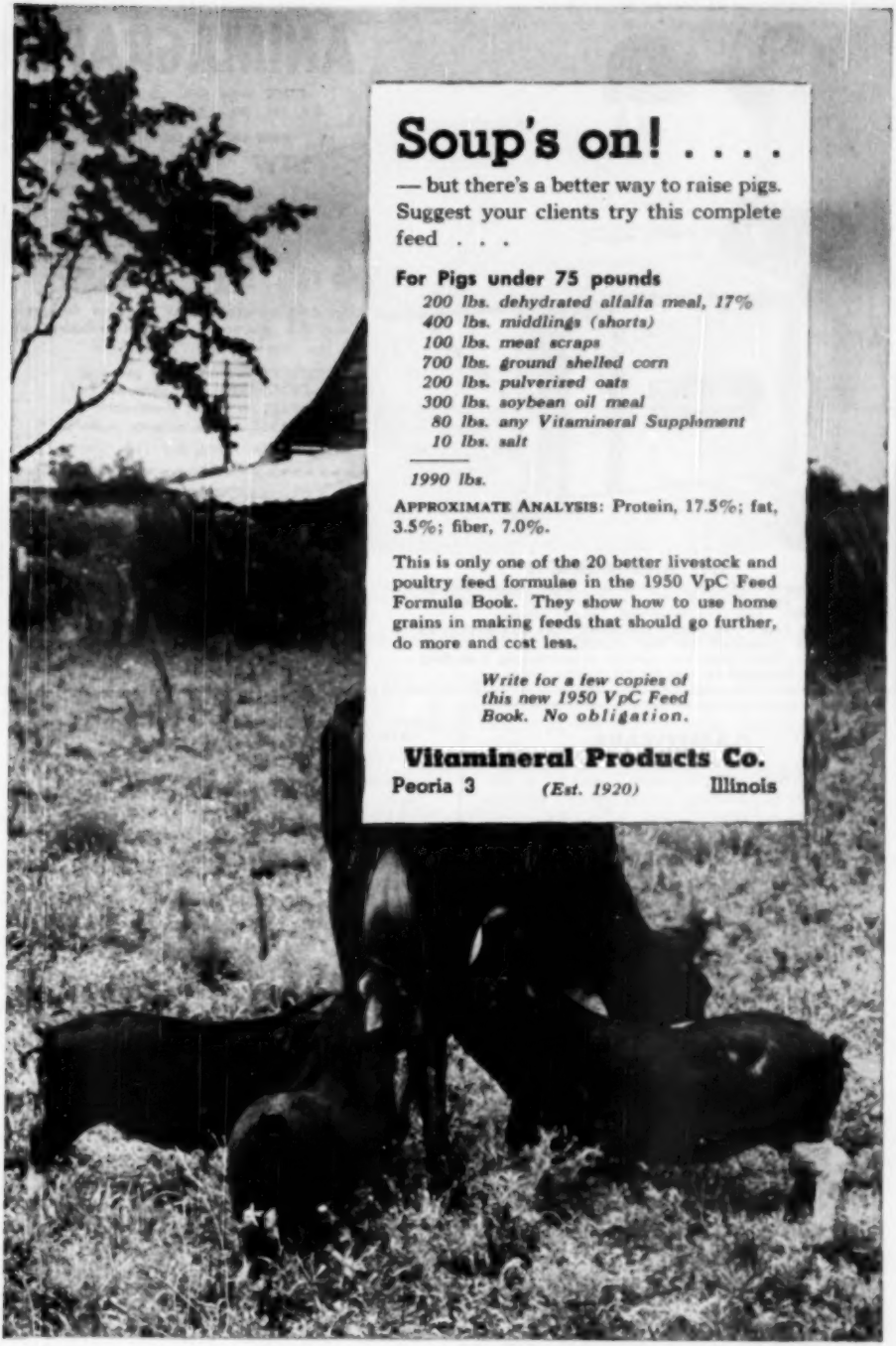
Missouri Veterinary Medical Association. Annual summer meeting. Colonial Hotel, Springfield, Mo., June 19-20, 1950. J. L. Wells, Box 676, Kansas City, Mo., secretary.

Montana Veterinary Medical Association. Annual meeting. Finlen Hotel, Butte, Mont., June 19-21, 1950. E. A. Tunnicliff, Bozeman, Mont., secretary.

Wisconsin Postgraduate Conference for Veterinarians. University of Wisconsin College of Agriculture, Madison, Wis., June 20-21, 1950. C. A. Brandly, University of Wisconsin College of Agriculture, Madison 6, Wis., chairman.

Northeastern Pullorum Conference. University of Vermont, Burlington, Vt., June 20-21, 1950. W. D. Bolton, Related Services Division, Uni-

(*Continued on page 28*)



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300 lbs. soybean oil meal
80 lbs. any Vitamineral Supplement
10 lbs. salt

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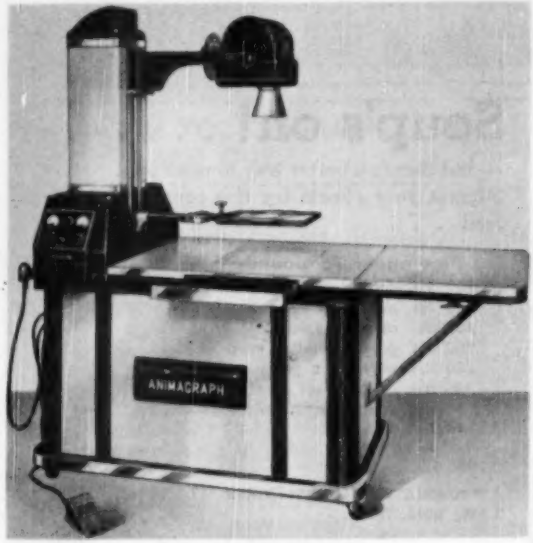

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A balanced formula of gambir, camphor, sulphocarbolates and compound chalk powder in convenient tablet form.

Bottle of 100.....$ .95 5-100's.....4.50

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(Continued from page 26)

versity of Vermont, Burlington, Vt., program chairman.

Vermont Veterinary Medical Association. Annual summer meeting. Camp Elizabeth Inn, Newport, Vt., June 22-23, 1950. W. D. Bolton Related Services Division, University of Vermont, Burlington, Vt., secretary.

New Jersey, The Veterinary Medical Association of. Semiannual meeting. Haddon Hall, Atlantic City, N.J., June 22-23, 1950. J. R. Porteus, P.O. Box 938, Trenton, N.J., secretary.

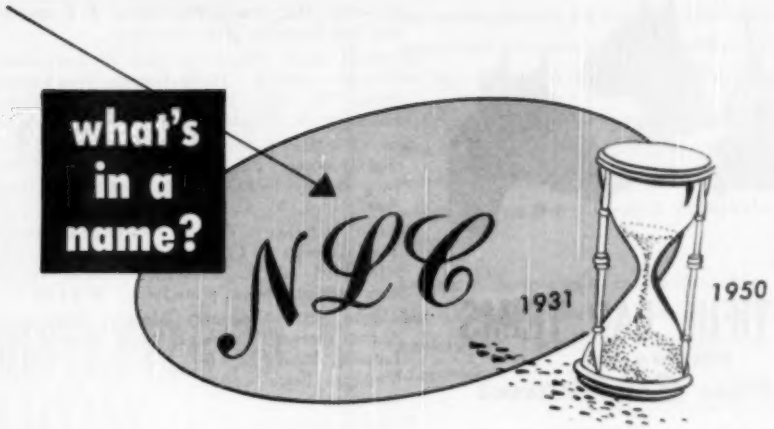
American Society for the Study of Sterility. Sir Francis Drake Hotel, San Francisco, Calif., June 24-25, 1950. Walter W. Williams, 20 Magnolia Terrace, Springfield 8, Mass., secretary.

Georgia Veterinary Medical Association. Annual meeting. Hotel Oglethorpe, Brunswick, Ga., June 26-27, 1950. Chas. C. Rife, 420 Edgewood Ave., N. E., Atlanta, Ga., secretary.

California State Veterinary Medical Association. Annual meeting. Hotel Claremont, Berkeley, Calif., June 26-28, 1950. C. E. Wicktor, 203 Administration Bldg., Union Stock Yards, Los Angeles 58, Calif., program chairman.

Maritime Veterinary Conference. Second annual joint conference of the three maritime veterinary associations. Mount Allison University,

(Continued on page 30)



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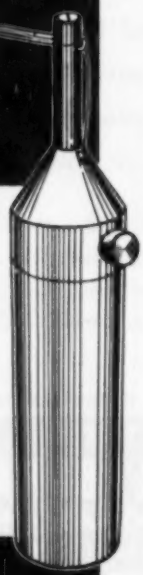

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- For non-absorbable suture material: Cotton, silk, linen, nylon, stainless wire.
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726 Clark St. Lansing, Mich.

(Continued from page 28)

Sackville, N.B., June 27-29, 1950. J. F. Frank, Box 310, Sackville, N.B., secretary.

Maryland State Veterinary Medical Association. Summer meeting. Hotel George Washington, Ocean City, Md., June 29-30, 1950. J. Walter Hastings, Sr., Cambridge, Md., secretary.

New York State Veterinary Medical Society. Annual meeting. Saranac Inn, Saranac, N. Y., June 29-July 1, 1950. J. S. Halat, 1231 Gray Ave., Utica, N. Y., executive secretary.

Ontario Veterinary College. Refresher course. The Veterinary College, Guelph, Ont., July 5-18, 1950. A. L. MacNabb, Ontario Veterinary College, Guelph, principal.

Michigan State Veterinary Medical Association. Annual meeting. Michigan State College, East Lansing, Mich., July 6-7, 1950. B. J. Killham, Michigan State College, East Lansing, Mich., secretary.

Kentucky Veterinary Medical Association. Annual meeting. Seelbach Hotel, Louisville, Ky., July 12-13, 1950. Ross Brown, Department of Animal Pathology, University of Kentucky, Lexington 29, Ky., secretary.

Northwest Veterinary Medical Conference. Annual meeting. Winthrop Hotel, Tacoma, Wash., July 17-19, 1950. J. L. Ellis, 2022 E. 4th St., Olympia, Wash., secretary.

Ontario Veterinary Association. Summer meeting. Ontario Veterinary College, Guelph, Ont., July 19-21, 1950. A. L. MacNabb, Ontario Veterinary College, Guelph, principal.

American Veterinary Medical Association. Annual meeting. The Municipal Auditorium, Miami Beach, Fla., Aug. 21-24, 1950. J. G. Hardenbergh, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Tennessee Short Course for Veterinarians. University of Tennessee, Knoxville, Tenn., Sept. 7-8, 1950. Dennis Coughlin, 1713 Yale Ave., Knoxville 16, Tenn., resident secretary.

Purdue University, thirty-eighth annual short course for veterinarians, Oct. 4-6, 1950. L. M. Hutchings, Purdue University School of Agriculture, Lafayette, Ind., chairman.

Iowa, Eastern Veterinary Medical Association. Annual meeting. Hotel Montrose, Cedar Rapids, Iowa, Oct. 19-20, 1950. N. R. Waggoner, Olin, Iowa, secretary.

United States Livestock Sanitary Association. Annual meeting. Westward-Ho Hotel, Phoenix, Ariz., Nov. 1-3, 1950. Dr. R. A. Hendershott, 1 West State St., Trenton, N.J., secretary.

Oklahoma Veterinary Medical Association. Annual meeting. Skirvin Hotel, Oklahoma City, Okla., Jan. 8-9, 1951. Lewis H. Moe, 1736 W. 3rd Ave., Stillwater, Okla., secretary.

Indiana Veterinary Medical Association. Annual meeting. Hotel Severin, Indianapolis, Ind., Jan.

(Continued on page 32)

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The healthy 8-week old puppy is your ideal patient for vaccination. Immunization is established before the age of greatest susceptibility. This means economy.

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25 gram—Box of 25	$2.20
25 gram—Box of 100	7.98
12½ gram—Box of 25	1.27
12½ gram—Box of 100	4.33
2 gram—Bottle of 100	.84

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REGULAR N. F. or DRENCH TYPE

1 lb. can (12 to case)	70c per lb.
5 lb. can (5 to case)	67c per lb.
10 lb. drum	66c per lb.
25 lb. drum	64c per lb.
150 lb. drum	57c per lb.

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BENZENE HEXACHLORIDE

10% gamma isomer wettable

6 lb. bag	42c per lb.
8-6 lb. bags	34c per lb.
100 lb. drum	33c per lb.

CHLORDANE 40% WETTABLE

4 lb. bag	70c per lb.
12-4 lb. bags	62c per lb.
100 lb. drum	57c per lb.

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12-4 lb. bags	70c per lb.
24-4 lb. bags	68c per lb.

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10 lb. drum	1.70 per lb.
25 lb. drum	1.65 per lb.
100 lb. drum	1.55 per lb.

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1 lb. bottle	$4.45 per lb.
5 lb. bottle	4.40 per lb.

SULFAPYRIDINE SODIUM POWDER

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5 lb. bottle	9.75 per lb.

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(Continued from page 30)

10-12, 1951. W. W. Garverick, Zionsville, Ind., secretary.

Illinois State Veterinary Medical Association. Annual meeting. Hotel Sherman, Chicago, Ill., Jan. 24-26, 1951. A. G. Misener, 6448 North Clark St., Chicago 26, Ill., secretary.

Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Russell P. Cope, 1205 San Pablo Ave., Berkeley 6, Calif., secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Thomas Eville, Route 1, Box 136H, Fresno, Calif., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

East Bay Veterinary Medical Association, bimonthly, the fourth Wednesday. O. A. Soave, 5666 Telegraph, Oakland, Calif., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis, Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

Illinois Valley Veterinary Medical Association, the second Wednesday of even-numbered months. R. A. Case, 400 S. Garden St., Peoria, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind, secretary.

Jefferson County Veterinary Society, Louisville, Ky., the first Wednesday evening of each month. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curts, 70 Central Ave., Kansas City 18, Kan., secretary.

Keystone Veterinary Medical Association. School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., the fourth Wednesday of each month. Raymond C. Snyder, N. W. Cor. Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Massachusetts Veterinary Association. Hotel Statler, Boston, Mass., the fourth Wednesday of each month. C. L. Blakely, Angell Memorial

(Continued on page 36)

She Can Have Larger Litters and Stronger Pups

Veterinary medicine has vastly improved the health, condition, and livability of all dog breeds. Distemper and rabies are being controlled by preventive immunization. There are many effective treatments for other infectious diseases, digestive disturbances and parasitic infestations.

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Miami Beach Street Diagram, Showing Hotels Selected for AVMA Meeting and Their Proximity to Municipal Auditorium

NOTE: The section shown on this diagram lies in the middle eastern part of Miami Beach and represents only a small portion of the city's total area.

1. Albion
2. Crest
3. Delano
4. Dorchester
5. Dorset
6. Gale
7. Georgian
8. Greenview
9. Marseilles
10. Maxine
11. National
12. Raleigh
13. Ritz Plaza
14. Sagamore
15. Sands
16. San Juan
17. Shelby
18. Shore Club
19. South Seas
20. Surfcomber

HOTEL RESERVATIONS — MIAMI BEACH SESSION

Eighty-Seventh Annual Meeting, AVMA, August 21-24, 1950

Selected Miami Beach hotels listed below are all near the Municipal Auditorium, where convention activities will be centered. Fill out the reservation form and mail it with $10.00 deposit for each room directly to hotel of your first choice, indicating second and third choices also. Make check or money order payable to hotel of first choice. Deposit will be refunded if reservation is cancelled by Aug. 15. If hotel of first choice is filled, it will forward request to another hotel you have indicated. Conformation will come from hotel which accepts reservation. Since this is an auditorium convention, there will be no headquarters hotel.

HOTELS AND RATES* —SEE LOCATIONS ON OPPOSITE PAGE

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Hotel and Address	Single	Double (with Twin Beds)
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(Continued from page 32)

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Michiana Veterinary Medical Association. Hotel Elkhart, Elkhart, Ind., 7:00 p.m., the second Thursday of each month. R. W. Worley, 3224 Lincoln Way West, South Bend, Ind., secretary.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New York City Veterinary Medical Association. Hotel Statler, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Northern San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. I. N. Bohlender, Box 588, Turlock, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. James R. Ketchersid, 666 East Highland Avenue, San Bernardino, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. E. W. Paul, Box 866, Redwood City, Calif., secretary.

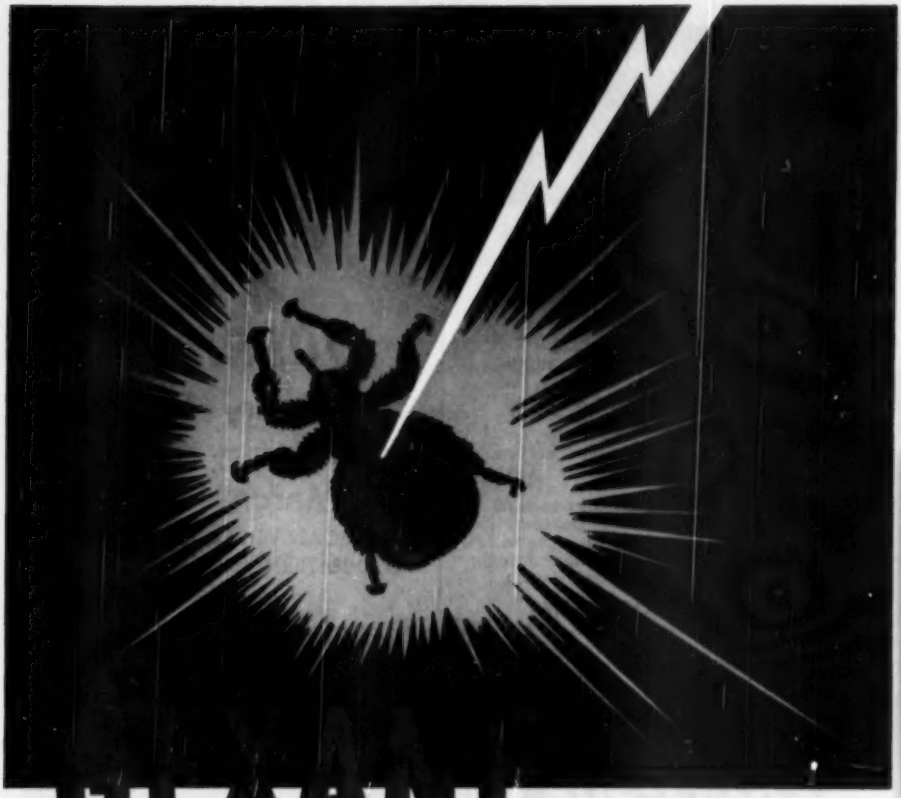
Redwood Empire Veterinary Medical Association, the second Tuesday of every other month. Charles D. Stafford, Novato, Calif., secretary.

Sacramento Valley Veterinary Medical Association, the fourth Friday of each month. R. C. Goulding, 11511 Capitol Avenue, Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. R. J. McFarland, 3621 Jewell St., San Diego 9, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. D. H.

(Continued on page 38)



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AMERICAN VETERINARY MEDICAL ASSOCIATION, 600 S. Michigan Ave., Chicago 5, Ill.

(Continued from page 36)

McDole, 8674 Melrose Ave., Los Angeles 46. secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club. Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, 8:00 p.m., at the Tulsa Hotel. R. S. Todd, 1222 S. Lewis, Tulsa, Okla., secretary.

Foreign Meetings

Australia Veterinary Association. Twenty-seventh annual general meeting. University of Adelaide, South Australia, May 22-26, 1950. Max Henry, Veterinary School, University of Sydney, N.S.W., Australia, secretary.

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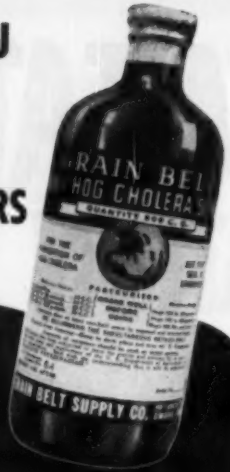

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Wanted—Veterinarians

WANTED—graduate veterinarian under 50 years of age for unusual opportunity with serum manufacturer. Knowledge of hog-serum production preferred, but not necessary. Address "Box U 4," c/o Journal of the AVMA.

Assistant wanted for small animal hospital in Chicago suburb. State salary expected and experience. Address "Box U 9," c/o Journal of the AVMA.

WANTED—competent, hustling veterinarian for mixed practice. Give complete, detailed personal and professional status, including availability, salary, and references in first letter. Address "Box U 10," c/o Journal of the AVMA.

Independent opportunity for young practitioner. Southern California coast. Give references, experience, and availability. Address "Box U 11," c/o Journal of the AVMA.

Well-established kennel, located in large midwest city, desires services of reliable veterinarian. Will build and equip modern hospital to suit. Salary open. Address "Box U 12," c/o Journal of the AVMA.

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WANTED—assistant, if desired, leading to partnership, in mixed practice, mostly large animals in prosperous Northwest farming community. Salary open. Address "Box U 29," c/o Journal of the AVMA.

(Continued on page 44)

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No. 5

DOG RESEARCH NEWS

At First Sign of Eclampsia —Call Your Veterinarian

Eclampsia is occasionally encountered by the bitch at whelping. It may occur in 24 to 30 hours or may not show up for 4 or 5 days.

The bitch gets restless and her eyes show a worried look. Respiration is short and very rapid. The mucous membranes become hypermic (pale). Gradually the bitch becomes paralyzed and is unable to stand. Proper care is needed, as the dog may die within 12 to 48 hours. A Veterinarian should be consulted immediately. Most bitches recover when cared for in time.

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City and State .....

(Continued from page 42)

Wanted—Practices

WANTED TO BUY—an established small animal hospital doing enough business to require at least 2 veterinarians to handle. Prefer a warm climate or resort area. Please send details and photo in first letter. Address "Box U 3," c/o Journal of the AVMA.

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WANTED—practice preferably in Illinois or Indiana, by veterinarian fully qualified. Several years' experience, no real estate, will rent. Would prefer location near harness-horse track in those two states. Address "Box U 8," c/o Journal of the AVMA.

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Experienced veterinarian, married, graduate of AVMA approved school, desires position as assistant to veterinarian in the East. Possesses New Jersey and Pennsylvania licenses. Address "Box U 6," c/o Journal of the AVMA.

Ontario graduate, experienced, four years mixed practice, one year small animal hospital, desires position with definite future, preferably small animals. State requirements, facilities, and salary in first communication. Address "Box U 7," c/o Journal of the AVMA.

WANTED POSITION—as assistant or helper to older veterinarian in mixed practice. Veterinarian, white, 35 years old, graduated from university in Europe, worked in Lithuania, Germany, and Belgium. Address Dr. Mark Pakalniskis, 1431 Mullane, Detroit 9, Mich.

Graduate veterinarian from Europe, DP, 30, single, with car, not afraid of work, desires assistantship. Five years' experience in Germany with large and small animals. Please state conditions in making your offer. Address Dr. Leonard Zailskas, 460 Margaret St., Plattsburg, N.Y.

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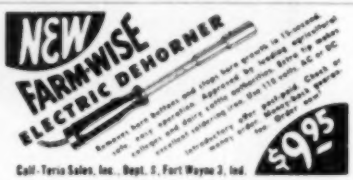
(Continued on page 46)



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(Continued from page 44)

June 1950 graduate, AVMA-approved school, Christian, 30, single, desires assistantship in large or mixed animal practice. No geographic preference. Address "Box U 16," c/o Journal of the AVMA.

1949 graduate of AVMA-approved school desires assistantship in general or small animal practice. Age 34, married, with 1 child. Address "Box U 17," c/o Journal of the AVMA.

Graduate veterinarian, married, age 30, B.S., D.V.M., desires position on teaching staff or in research. Available June 15. Has had some teaching experience and has been in practice for the last year. Address "Box U 26," c/o Journal of the AVMA.

POSITION WANTED—with city, state, institution, or in teaching, by veterinarian with B.S. and D.V.M. degrees. Twelve years' experience in busy private large and small animal practice, twelve years' experience in tuberculosis and Bang's disease control, three years' experience in municipal meat inspection, and some poultry practice. Available at once. Salary desired $5,000. Address "Box U 23," c/o Journal of the AVMA.

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(Continued on page 48)

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(Continued from page 46)

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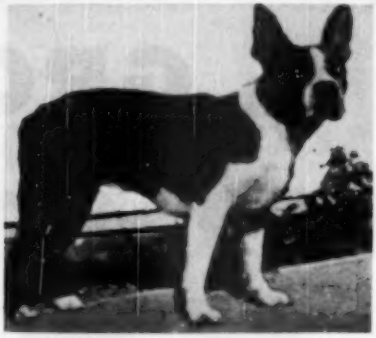

loss. Picked up on Highway 395 north of San Bernardino, Sept. 2, 1949. $500 reward for information leading to her return. Address R. F. Rummel, 5122 Gaviota, Long Beach 7, Calif. Phone collect to Long Beach 201-017.

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1. Vet. Med. *42*:170, May, 1947.
2. North Am. Vet. *27*:564, Sept., 1946.
3. J. Am. Vet. M.A. *107*:238, Oct., 1945.
4. J. Am. Vet. M.A. *106*:7, Jan., 1945.

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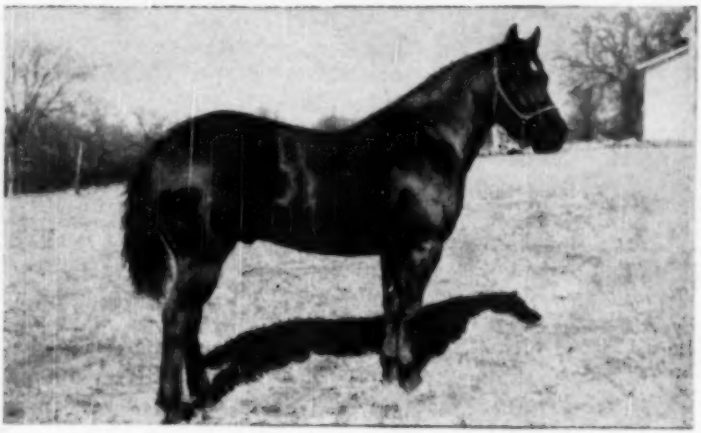

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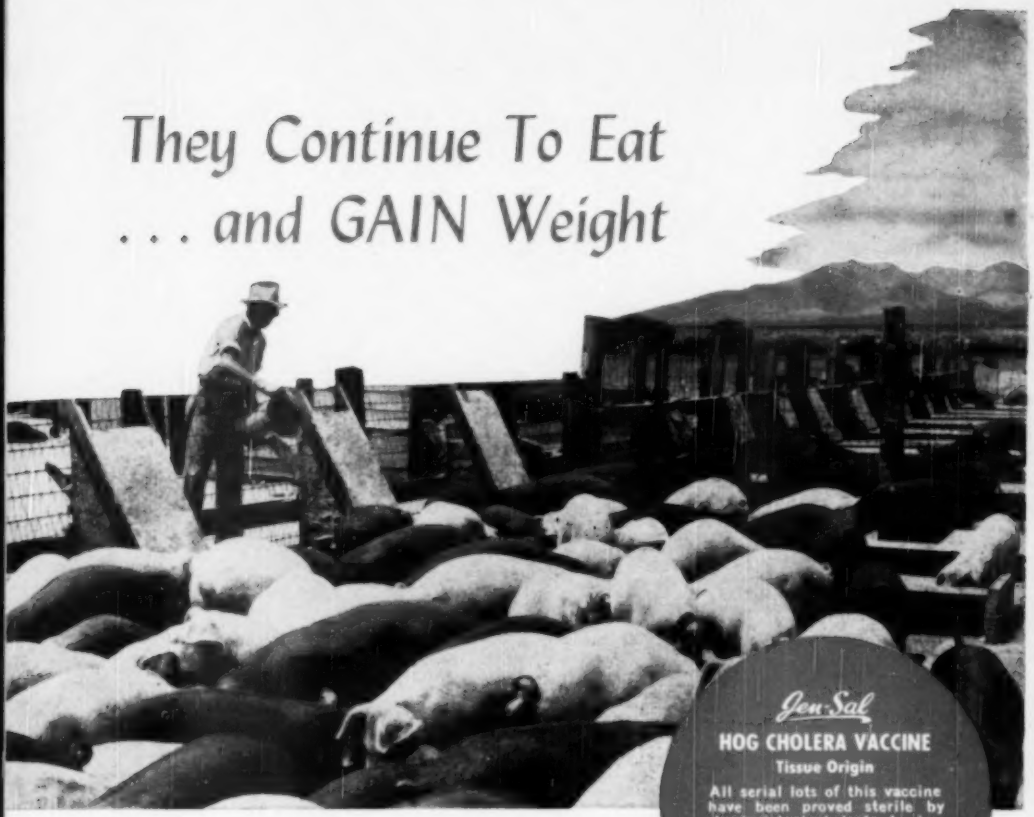

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